

CHAPTER 4

COMPARING THE STRATEGIC EVOLUTION OF GEORGIA-PACIFIC, MEAD AND WEYERHAEUSER

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1 INTRODUCTION

Competitive action has been defined as a market-based move designed to build or defend competitive advantage and performance. Research in competitive dynamics focuses on competitive actions and reactions, competitive advantage and performance (Smith, Ferrier, & Ndofor, 2001). Its goal, as noted by Chen and Miller (1994), is to look beyond the theories of competitive rivalry, and to empirically observe the companies' actual competitive moves.

As Smith et al (2001) observes, the early studies in competitive dynamics concerned product introductions and competitors' countermoves in the banking and high technology photography businesses (MacMillan, McCaffery, & van Wijk, 1985; Bettis & Weeks, 1987). Next, the research shifted to studying responses of competitive actions in high-tech industries (Smith, Grimm, Chen, & Gannon, 1989) and antecedents and consequences of competitive action in the airline industry (Smith, Grimm, Gannon, & Chen, 1991; Chen, Smith, & Grimm, 1992; Chen & MacMillan, 1992; Chen & Miller, 1994; Miller & Chen, 1994; Chen & Hambrick, 1995; Chen, 1996; Miller & Chen, 1996a; Miller & Chen, 1996b; Baum & Korn, 1996; Hambrick, Cho, & Chen, 1996; Smith, Grimm, Wally, & Young, 1997). Later studies have tested findings in the software industry (Young, Smith, & Grimm, 1996) and in multiple industry studies (Ferrier, Smith, & Grimm, 1999).

The studies mentioned above have been statistical in nature. The earliest studies, including MacMillan 1985, which studied 11 product introductions, used primary data such as interviews as sources. The research done in the early 1990s used secondary data collected from trade magazines. Researchers used large samples within one industry and developed detailed action-type classifications. E.g. many airline industry studies covered 17-32 airlines, in a 7-8 year period, and included

about 900 actions. Later studies, like Young and Ferrier, used databanks to study selected SIC code companies in a 7-8 year period, with Ferrier's specific focus being on leader-challenger pairs.

Much of the research has focused on action and response characteristics (Table 4.1), and the predictability and profitability of competitive actions. Actions and responses have been analyzed according to their attributes, e.g. action irreversibility has been found to decrease response likelihood (Chen & MacMillan, 1992). Other research areas have included the inertia and simplicity of competitive actions, and leader-challenger dynamics and multipoint competition.

Table 4.1. *Action and response characteristics and predictability.*

<i>Predictors of action</i>		<i>Characteristics of</i>	
<i>Environment</i>	<i>Company</i>	<i>Action</i>	<i>Response</i>
Strategic similarity	Past experience	Radicality	Timing
Product differentiation	Past performance	Magnitude	Speed
Resource similarity	Market share	Threat	Delay
Market commonality	Slack	Irreversibility	Imitation
Market growth	Awareness	Visibility	Match
Entry and exit barriers	Motivation	Centrality	Difficulty
Number of firms	Size	Speed	Likelihood
Industry concentration	Age	Timing	Visibility
Information availability	Management	Aggressiveness	Number and order of responders

Source: Smith et al., 2001.

Recently, there has been a call for studies in different industries and research on the antecedents of competitive action (Smith et al., 2001). Additionally there has been demand for more longitudinal research (Ketchen, Snow, & Hoover, 2004). Building on these observations, the research objective of this study is to *explore the longitudinal competitive dynamics in the forest industry*. This study makes three contributions. 1) The forest industry differs from the earlier samples by being a mature capital intensive industry where technology innovations and consumer pricing moves have a smaller role. 2) A long time frame is taken, spanning over 100 years. 3) The study uses a case approach. Cases give an in-depth picture of competitive dynamics within the selected companies, and allow us to see the antecedents for taking competitive action. The previous research has strictly limited itself in observing the interplay of actions and responses. As the objective of competitive dynamics is to observe empirically how the companies compete, the intention of this research is to broaden the perspective into observing the *antecedents of competitive actions*. The study is explorative and industry-specific. While the three case companies do not represent the entire industry, they are seen as sufficient to provide insights into the industry dynamics.

The case companies, Georgia-Pacific, Weyerhaeuser and MeadWestvaco, were chosen from the top of the 2003 PPI top 100 listing by using the following rules: 1) they are American forest industry companies, 2) they have not been owned by foreign companies to a major degree, and 3) they operate mostly in the traditional

forest industry, not e.g. in consumer products. PPI is the Pulp and Paper International magazine, which publishes a global top 100 listing every September based on the previous year's data. Georgia-Pacific, Weyerhaeuser and MeadWestvaco were the 2nd, 5th and 7th American companies, if measured by pulp, paper and converting sales. International Paper was the first, but it was excluded because it is covered elsewhere in this book. The 3rd and 4th were Procter & Gamble and Kimberly-Clark, but they were excluded as being too consumer business oriented. The 6th was Smurfit-Stone Container Corporation, but it has been significantly owned by a European group. MeadWestvaco is the product of a merger between Mead and Westvaco in 2002. To simplify the research, only the Mead branch of its history was followed. Mead was chosen, because it was 42 years older as a company, and because its historical orientation to the more mature paper business broadens our view of the industry evolution mechanisms.

The cases were built with replicated logic and triangulated from several sources. The companies' moves were gathered into a database on a yearly basis from the Moody's International Industry Manuals, Factiva and Paperloop news services, company Annual Reports and histories. Longitudinal narratives were written using temporal bracketing to distinguish between strategically different periods. The strategic actions were quantified by using a coding manual designed by and tested with two senior researchers and two doctoral students, and analyzed quantitatively. The coding had 3 major categories and 17 subcategories, and addressed what had happened, in which product category, and whether this was jointly or alone. The coded data included 1308 strategic actions made by the case companies before 2004. The actions concerned capacity and ownership changes and were strategic in nature. (Yin, 2003; Langley, 1999; Eisenhardt, 1989).

This article is divided into four parts: 1) the historical narratives of the case companies, 2) comparing the case companies' financial and strategic development, 3) reflections on the cases, and 4) conclusions.

2 HISTORICAL BACKGROUNDS

2.1 *Georgia-Pacific Corporation*

2.1.1 *Introduction*

Georgia-Pacific is a company which has experienced many transformations in its lifetime. It has turned itself from a small building products merchant to a big building product manufacturer. Then it turned into a large U.S. pulp, paper and converting business. In the new millennium, Georgia-Pacific turned itself into one of the world's largest tissue producers, and refocused its business by divesting its forestland and its long-time core business in building products merchanting. Table 4.2 shows how the company's center of gravity has moved down in the value chain. Despite the recent refocusing, the building products manufacturing business is still an essential part of the company.

In the course of action the company headquarters moved from Georgia to Oregon and then back to Georgia again. International sales were significant in its

early years; then after WWII the company's business was domestic-oriented. In the new millennium the company has gained a position as a significant international tissue producer. Acquisitions have often been the tool of choice for Georgia-Pacific to grow and change its product portfolio and positioning.

Table 4.2. *Development of Georgia-Pacific's product portfolio as percentage of net sales.*

	1950	1965	1975	1985	1995	2003	Average
Lumber	17	7	18	21	16	12	15
Plywood	73	38	30	25	21	17	34
Pulp, packaging & paper	0	36	29	22	42	28	26
Tissue	0	-	-	8	6	32	12
Other	11	19	23	24	15	11	17
Total	100	100	100	100	100	100	100

Source: Georgia-Pacific Annual Reports. Distribution sales included in each row. In cyclical businesses like the forest industry, net sales measure the relative importance of a product area better than the volatile net profits. "Other" includes e.g. the production of chemicals.

The historical analysis is divided into four parts. The first period (1927-1946) signified the birth and initial growth. The company was a merchandiser of lumber, plywood and veneers in the South and expanded into sawmills. In the second period (1947-1959) the company moved more strongly to manufacturing, expanded to the West Coast and its distribution developed toward national coverage. At the very end of this period the company started diversifying into pulp, paper and chemicals. The third period (1960-1982) brought diversification and fast growth in building products, chemicals, pulp and paper businesses. The fourth period (1983-2003-present) has witnessed strategic concentration, major acquisitions, divestments and closures.

2.1.2 From merchanting to manufacturing (1927-1946)

The Georgia Hardwood Lumber Company was incorporated in September 1927. The founder of the company was Owen R. Cheatham, who started the business by acquiring a wholesale hardwood lumber yard in Augusta, Georgia. Only two years after the incorporation, the nation fell into the Great Depression, from which it did not recover until after the Second World War. Especially difficult were the years 1929-1933, when personal consumption expenditures fell 40 percent in the U.S. (Hughes & Cain, 1994, p. 460). Georgia Hardwood weathered the difficulties because it stayed small and kept overhead expenses low, e.g. in 1934 it had only five employees. As a wholesaler, the company did not own timberland and avoided the land taxes that troubled many of its peers.

At the time, the company ideology was to first develop product markets and an effective sales organization by merchanting, and then to select suitable manufacturing facilities to supply the markets (Georgia-Pacific Annual Report, 1948). Under the slowing demand in 1932, they created markets by starting a hardwood export business to Europe. In the mid-1930s came a vertical expansion, as

the company acquired three hardwood and two softwood sawmills in the South. The war effort in WWII consumed lumber both in the U.S. and in its allies, like Britain, which was somewhat cut off from Scandinavian lumber markets. The company responded to growing demand by acquiring additional sawmills and lumberyards. It also ended up as the largest army supplier, by founding a distribution lumber yard to serve army needs. After WWII, the Marshall Plan generated some additional demand in Europe. In the 1940's exports represented about one third of the company's sales (Georgia-Pacific Annual Report, 1948). To attract customers, the company wholesale warehouses also carried items manufactured by others. E.g. in 1943 the company had added Douglas fir plywood and lumber to its warehouse offerings.

2.1.3 Expanding the business (1947-1959)

After the war, demand for new housing soared in the U.S. and Georgia Hardwood saw increasing demand for plywood. Plywood brought three times the returns of lumber (Monroe, 2001, p. 45, p. 50). The northwestern part of the U.S. produced two thirds of all the plywood, and unlike the Northwestern Douglas fir, the Southern softwoods were not suitable for plywood production. In 1947 Georgia Hardwood expanded to Northwestern plywood by acquiring the Bellingham Plywood Company in Washington. In the process, Georgia Hardwood took its first public financing. Georgia Hardwood soon bought two more plywood producers in the Northwest and one hardwood plywood producer in the South. It consequently changed its name to Georgia-Pacific Plywood and Lumber Company. Within three years the company had turned into the nation's largest plywood producer. In 1951 the company name was shortened to Georgia-Pacific Plywood Company, to reflect its changed status. In 1953 the company moved its headquarters from Georgia first to Olympia, Washington, where it now had several plywood mills, and the next year further to Portland, Oregon. In 1956 its name was shortened to the current form, Georgia-Pacific Corporation.

In 1949 the plywood prices collapsed, due to a recession, and stayed low because of competition and better utilization of wood (Monroe, 2001, p. 50). Georgia-Pacific decided to move into timberland ownership to be able to control its raw material costs and to ensure the availability of the large old-growth peeler logs for its plywood operations (Monroe, 2001, p. 55; Georgia-Pacific Annual Report, 1951). Their fear for log supply was reasonable, since the plywood industry had significantly grown in the past few years; reforestation was not yet generally practiced, thus causing the land price to rise with the growing log demand; and due to the observation that the new-growth logs were significantly smaller than the huge old-growth timber logs. By the end of the 1950's, the company owned more than one million acres (400,000 hectares), most of it Douglas fir in Washington and Oregon, although small amount of hardwood was also bought in the South, and old-growth Redwood, Sugar pine and Ponderosa pine lands in the West. Georgia-Pacific additionally expanded its product offering to birch veneers and imported logs to produce tropical hardwood plywood. The company financed many of its early

timberland acquisitions by timber sales, which created some bad publicity as some small sawmill towns feared unemployment after their timber would be gone.

After buying a lot of production capacity the company faced a challenge of how to sell the products. This was solved by creating more wholesale building products distribution centers around the country in places with high demand. By 1959 the company had already 60 distribution centers. These warehouses also carried other often-needed supplies like nails, roofing and gypsum.

As the operations grew, so did the amount of waste products, like sawdust, bark, peeler log studs, and odd bits and pieces. Larger waste was processed to chips and sold to pulp mills. Smaller waste was burned. The management started thinking about how it could get more value out of company operations and assets. First it increased its chip production capacity. But as the pulp companies were unwilling to pay good prices for the chips, Georgia-Pacific built its own kraft pulp and linerboard mill in Toledo, Oregon, in 1957. In fact, the Toledo mill was the only pulp and paper mill the company ever built (Monroe, 2001, p. 91, p. 20). In 1958 the company entered the chemical business when it started producing resin adhesives from bark and waste for its plywood operations. Additionally the company started surveying the petroleum and mineral deposits in its timberlands to cash in on them by leasing them to other companies. A new company logo was adopted in 1959. The second period ended in 1960 when Robert B. Pamplin started de facto running the company after the company's founder, Owen R. Cheatham, suffered a stroke (Monroe, 2001, p. 84). Officially Pamplin's CEO period started in 1968 when Cheatham retired.

2.1.4 Domestic diversification and fast growth (1960-1982)

Georgia-Pacific was run by Robert B. Pamplin from 1960-1975, and after his retirement by Robert Flowerree 1976-1982. Both had made long careers in the company. In this period Georgia-Pacific grew both vertically and horizontally. Geographically it spread over the United States, and to a smaller extent into Canada, Southern Asia and Brazil. The company had three growth areas: building products, chemicals and pulp and paper, as it e.g. stated in Annual Report of 1976. The company expanded simultaneously in these businesses, moved down the value chain into conversion and also integrated into related businesses as it tried to maximize the profits from its resources by converting the by-products of successive manufacturing operations (Georgia-Pacific Annual Report, 1969). Most of the company's growth took place in the Southern and Eastern U.S. In 1982 the company moved its headquarters to Atlanta, Georgia, to reflect its changed geographic focus.

In the building products sector, the company grew in distribution and manufacture. Its building products distribution business grew from 60 warehouses in 1960 to 158 in 1981, now serving most of the U.S. These warehouses ensured smooth production and better profitability of the mills by their ability to sell the growing number of products. The warehouses also provided expansion opportunities. In the 1960's Georgia-Pacific integrated backwards to gypsum and roofing production, both of which it had previously sold in its warehouses. The company still followed the ideology of first developing the markets and then moving on to manufacture (Georgia-Pacific Annual Report, 1976).

Building products manufacturing of lumber and plywood was greatly expanded, mostly in the South and mostly in hardwoods and Southern pine. Between 1960 and 1980, the company's timberland control grew from about 1 million to 7 million acres (400,000 to 2.8 million hectares). Most of this growth took place in the South, although the company also acquired lands in Oregon, California, Canada, and the tropics. The sudden interest towards Southern pine was caused by Georgia-Pacific's innovation in 1963 when it succeeded in developing the industry's first Southern pine plywood. Soon the company had built many Southern pine plywood plants and acquired southern sawmills. However, in 1971 the Federal Trade Commission claimed the firm was lessening competition in the softwood plywood industry and it demanded divestments. This led to Georgia-Pacific spinning off 20 percent of its assets to the Louisiana-Pacific Corporation in 1972.

In the building products and forest sector, the company also added hardboard and particleboard plants, and in the 1980s a couple of oriented strand board plants as demand for affordable boards increased. The company expanded to furniture production in 1967. In the 1960s it gained logging rights to tropical hardwood and started producing mahogany and virola veneer in the Philippines and Brazil. In the 1970s the Asian focus changed from Philippines to Indonesian logging rights and plywood production.

In the pulp and paper sector Georgia-Pacific moved into converting and diversified its production. In 1961 the company built a containerboard converting plant for its Oregon containerboard operations. Soon after, it started acquiring containerboard mills and converting plants around the U.S. By 1981 Georgia-Pacific was a nationwide producer of corrugated containers. The company also diversified into bag and sack production, newsprint, groundwood papers, coated and uncoated printing papers, bleached foodboard and tissue. The tissue expansion was inspired by the acquisition of the Crossett Company of Arkansas in 1962, which among various assets included plenty of oak trees that were difficult to utilize in its existing businesses (Monroe, 2001, p. 98). The company decided to build a tissue mill for them. To learn the business, it first acquired two existing tissue producers, one in New York and the other in Washington. In two years Georgia-Pacific turned itself into a nationwide tissue producer. Other expansions were small moves into milk cartons, cups, plates and labels.

Between 1960 and 1980 Georgia-Pacific turned itself into a significant supplier of forest industry chemicals. The company grew its existing production and also diversified into related and unrelated chemical products. Related diversifications included raw materials and by products of its current chemicals, such as formaldehyde and ammonia. The unrelated diversifications included e.g. flavor enhancers, paint and varnish, fabric softeners and swimming pool chemicals. In the 1970s the company also expanded to plastics and PVC production, which utilized its existing chlorine business. Georgia-Pacific even bought two oil companies to supply its chemical operations with raw materials.

A 1980 *Fortune* article gives a sense of scale to Georgia-Pacific's growth. The article compared *Fortune* 500 companies from 1954 through 1979. The company ranked second in sales growth and earnings per share growth and fourth in stock performance; it was called "one of America's most voracious acquirers." According

to Fortune, Georgia-Pacific had made about 70 company acquisitions during the period (Monroe, 2001, p. 133). However, the acquisitions had indebted the company. Unfortunately for Georgia-Pacific, much of the debt was floating-rate; inflation and interest rates grew significantly in 1979-1981. At the same time demand for housing and kraft paper declined and Georgia-Pacific ended up in difficult cash problems. The general feeling was that the company had no direction and its strategy had to change (Monroe, 2001, p. 137). In 1983 Marshall Hahn took the reins.

2.1.5 Big acquisitions and non-core divestments (1983-2003)

Hahn started his period (1983-1993) under severe cash pressures. The answer was to divest all assets not closely related to the company's core forest products business (Georgia-Pacific Annual Report, 1983). Out went the small milk carton, label and paper plate businesses. Also the furniture business was divested and the company backed off from a plan to build a kraft paper mill in Indonesia and exited from tropical wood production and ownership.

As the company returned to health, Hahn began expanding its pulp and paper operations to reduce the exposure to the residential construction cycle (Monroe, 2001, p. 153). First the company doubled its containerboard production by acquiring a corrugated paper mill and 16 corrugated container plants from the St. Regis Corporation in 1984, for 360 million dollars. Next the company divested its commodity chemicals business, the oil company and some other non-core chemical operations, to help pay for the containerboard deal. Then the company moved further into high margin paper grades. It already had converted its newsprint production to printing paper in 1983, and now it converted some kraft paper machines to printing paper, bleached board and linerboard production. In 1987 Georgia-Pacific acquired its long time competitor U.S. Plywood for 215 million dollars. In 1989-1991 it built two big paper machines, adding over 600.000 tons of white paper.

In 1988 Georgia-Pacific bought the Brunswick Pulp & Paper for 667 million dollars, which included sawmills and a bleached board mill, and nearly doubled the company's market pulp production. The next big acquisition was the Great Northern Nekoosa Corporation in 1990 for 3.7 billion dollars. At the time, the deal was the largest combination in the history of the forest products industry, and also has been claimed to be the first hostile takeover effort of one of the leading forest industry companies in the industry (Georgia-Pacific Annual Report, 1990; Williams, 1991). The deal included market pulp, envelopes, fine paper distribution and paperboard converting facilities, and over 3 million tons worth of containerboard, uncoated fine and groundwood paper. The deal made Georgia-Pacific the largest uncoated free sheet and market pulp producer in the U.S., and the second largest containerboard producer in the country. After the deal the company divested the groundwood papers and part of the containerboard assets to help finance the deal. Hahn's philosophy had been "buying, rather than building primary mills," which added market share instead of industry capacity (Monroe, 2001, p. 168). When Hahn retired in 1993, Alston D. "Pete" Correll started leading the company.

The timing of the Great Northern deal had been bad, as the paper industry went into a downcycle in the early 1990's and the purchase price had exceeded the fair value by 2 billion dollars (Monroe, 2001, p. 172; Georgia-Pacific Annual Report, 1990). Correll's task was to improve the company's financial health, and he started aggressive cost controls. One of the novelties was to run the paper mills to demand instead of running them at full steam, which was the old industry norm (Monroe, 2001, p. 190; Siitonen, 2003, p. 100). Georgia-Pacific continued its divestments, selling the fine paper distribution business, envelopes, roofing business and some other assets. In 1995 the company wanted to improve the efficiency of its 127 independent building products distribution centers by replacing them with 2 big call centers. The change proved more costly and difficult than anticipated (Georgia-Pacific 10-K, 1999).

The company doubled its gypsum production capacity in 1996 by acquiring Domtar's gypsum business for 350 million. In 1998 it acquired CeCorr, which was the largest independent corrugated sheet producer in the U.S., for 275 million, and in 1999 it acquired Chesapeake Corporation's away-from-home tissue business for 755 million dollars and turned into the third biggest tissue producer in the U.S. In 1999 it acquired Unisource Worldwide, which was the leading independent distributor of paper products, packaging and sanitary maintenance supplies. Actually, the deal brought back the Butler Paper distribution assets that Georgia-Pacific had divested only in 1993. The decade ended with the acquisition of Fort James Corporation for 11 billion dollars in 2000, and was estimated to include 6.6 billion dollars of goodwill value. The deal turned Georgia-Pacific into the world's largest tissue producer, brought strong brands and increased Georgia-Pacific's marketing skills. Previously, Georgia-Pacific was perceived to compete with its bigger tissue competitors with price rather than with marketing power. The deal also turned it into a global tissue producer (Georgia-Pacific 10-K, 2000; Monroe, 2001, p. 20).

In 2001 Georgia-Pacific again had plenty of debt and the paper markets went into a downcycle. The company started selling and closing down non-cost-effective mills in all its product segments. It also divested part of its away-from-home tissue to SCA to get Department of Justice acceptance for the Fort James acquisition. Away-from-home tissue is tissue bought in larger units e.g. by hotels, schools, and hospitals. Then in 2001 Georgia-Pacific became the first major building products company to divest all its timberland assets when it sold its ownership in the Timber Company. The Timber Company had been established in 1997 as a separate operating group to hold and manage Georgia-Pacific's timberland assets. In 2001 the company sold all of its stand-alone uncoated free sheet mills to Domtar, representing almost half of its white paper capacity. In 2002 it sold 60% of its newly acquired paper distribution business to an investment group. And finally in 2004 Georgia-Pacific sold its building products distribution business, which had long been one of its core businesses. Since the 1980's do-it-yourself business had grown more important, and big chains like The Home Depot had grown to serve the market with an extensive product assortment. The company finally stopped seeing its distribution business as a core activity in 2003 when its outlets bought less than 30% of their supply from company-owned manufacturing facilities (Georgia-Pacific press release, 2003).

In 2003 the company was the largest manufacturer of tissue in the world. In North America it was the largest producer of plywood and oriented strand board, the leader in retail disposable tableware, the leading supplier of wood bonding and industrial resins, the third largest gypsum board manufacturer, the fourth largest lumber, bleached board, kraft paper and containerboard producer and corrugated packaging supplier, and the fifth largest uncoated free sheet producer (Georgia-Pacific Annual Report, 2003). In the future, the company says it intends to move further away from commodity products, toward consumer products and value-added services. This is thought to reduce the impact of commodity cycles and increase the profit margins (Georgia-Pacific 10-K, 2003).

2.2 Mead

2.2.1 Introduction

Mead was a large coated publication paper and bottling industry packaging producer in the U.S. The company was a significant forest industry company through the entire 20th century, but it was never among the top few producers. The company started as a magazine paper producer, and expanded to packaging in the early years. It remained loyal to these product areas, and moved steadily toward more value-added coated solutions. Its history shows many typical challenges facing a business operating in a mature paper industry sector. The company grew its paper and corrugated board capacities organically, while the non-core capacities, like linerboard and lumber, were systematically grown through joint ventures. The converting and diversified businesses were often grown through acquisitions.

Although the company was relatively diversified (see Table 4.3) the paper and packaging businesses often produced the majority of its earnings. The diversified businesses included many kinds of distribution businesses, ranging from paper and school products to industrial distribution. Mead also boldly expanded into unrelated businesses, like metal foundries and rubber, and developed innovative digital solutions like data services and printers. However, it could not make these ventures entirely worthwhile, and in the mid-1990s it focused again on the forest industry. Mead's story ended with the 2002 merger with Westvaco, which merged the companies' paper, office products and packaging operations, only to divest the paper production side in 2005. Now MeadWestvaco has several packaging conversion plants abroad, but its cartonboard production capacity is located mainly in the U.S.

Table 4.3. *Development of Mead's product portfolio as percentage of net sales.*

	1950	1966	1976	1985	1995	2000	2003	Average
Paper	74	28	26	37	24	44	28	37
Packaging and Paperboard	20	31	29	32	28	37	53	33
Distribution, Consumer and office products	0	41	30	30	48	19	14	26
Industrial	0	0	14	0	0	0	0	2
Other	6	0	1	1	0	0	4	2
Total	100	100	100	100	100	100	100	100

Source: Mead Annual Reports. In 1978 industrial manufacturing and distribution, and in 1991-1992 electronic publishing, temporarily brought about 30% of Mead's sales and 15% of its earnings. The 2003 numbers concern MeadWestvaco Corp.

This case study has four parts. In (1846-1945) Mead produced magazine paper, and expanded to specialty white papers and corrugated board in the 1930s. In (1946-1955) capacities increased, the company entered into joint-venture linerboard production, and started emphasizing costs and scale economies in the magazine papers. The third period (1957-1981) brought increasing diversification. First Mead diversified relatedly into packaging, packaging systems, paper merchandising and lumber. Later it diversified unrelatedly into stationery and furniture, metal castings, rubber, data services and industrial distribution. In the fourth period (1982-2002-present) the company increasingly concentrated on producing value-added paper and paperboard, like coated paper, coated kraft board, packaging systems and stationery. In 2002 Mead merged with Westvaco, creating the MeadWestvaco Corporation.

2.2.2 *The first 100 years (1846-1945)*

The roots of the Mead Corporation stretch back to the year 1846, when Colonel Daniel E. Mead and partners established Ellis, Chafin and Company in Dayton, Ohio, producing book and printing papers. The company was renamed to reflect ownership changes as Weston & Mead in 1856, Mead & Weston in 1860, and the Mead & Nixon in 1866. It became the Mead Paper Company in 1881 when Daniel Mead bought the entire company. Mead prospered and acquired in 1890 the Ingham Mills & Company, a pulp and paper mill in Chillicothe, Ohio, originally founded in 1812. However, Daniel Mead died the following year. His sons Charles and Harry, the next-generation managers, indebted the company. In 1904 banks stepped in and the company was put in the hands of trustees. The banks persuaded Harry's son, George H. Mead, to reorganize the company. George was a 28-year-old MIT-educated cellulose chemist, who already had advanced as the general manager of the Artificial Silk Company, the pioneer manufacturer of rayon. The Mead Pulp & Paper Company was incorporated in November 1st 1905 in Ohio. It had two paper mills and specialized in white book and magazine papers. (Belsito, 1991, p. 310; Whitaker, 1963, p. 9).

G.H.M. consolidated the company operations on the Chillicothe mill. Paper brands were pruned and Mead focused on producing white magazine paper. Several

paper machines were added in the following years. In 1910 G.H.M. started trading newsprint as a personal business side venture (Whitaker, 1963, p. 10). In 1920 Mead bought a Tennessee soda pulp mill and equipped it with a book paper machine. The next year Mead developed an aggressive sales organization to market its high quality papers. Several of Mead's competitors also chose to use its sales services (Heinrich, 2001). However, dependence on magazine paper was considered risky and the management wanted to diversify the company (Mead Annual Report, 1954). In 1925 Mead took part in a research endeavor that developed a way to make pulp and corrugated board from chestnut chips used in tanning extract manufacture, previously burned as waste. Soon the company acquired tanning extract facilities and built paperboard machines to utilize tanning chips in Virginia, Tennessee and North Carolina.

G.H.M. saw the depression years and low interest rates as an opportunity to grow the company. On February 17th, 1930 the previously independent Mead-related companies, including Mead Pulp and Paper Co., and Mead Paperboard Co., were consolidated to form the Mead Corporation. The consolidation reduced activity duplication and facilitated financing. The company was listed on the New York Stock Exchange in 1935. In the early 1930s Mead invested in research to improve its mass-circulation magazine paper grades. It invented a new machine coating technique for paper and a new filler that gave better printing results and improved the brightness and opaqueness of magazine paper (Mead Annual Report, 1949). Later in 1934 Mead pooled its coating patents with Kimberly-Clark, which allowed them to co-operate in printing paper development and to control the machine-coated paper markets until the early 1950's (Toivanen, 2004, p. 254, p. 290). Additionally, Mead diversified into specialty white papers and improved its paper merchandising operations by acquiring Dill & Collins Inc in Philadelphia in 1932, and the Wheelwright Paper Company in Massachusetts in 1934. The former was the descendant of the oldest paper mill in the U.S., originally established in 1690; the latter dated back to 1796. In 1938 Mead built with Scott Paper a 50% joint venture bleached sulphate pulp mill in Georgia, the Brunswick Pulp and Paper Company, to reduce its dependence on pulp imported from war-prone Scandinavia (Mead Annual Report, 1940). Some corrugated paperboard machines were added, but Mead's chestnut chip pulp did not suit linerboard production (Mead Annual Report, 1949). To improve linerboard supply, in 1937 Mead built a big linerboard mill in Florida with Almour's Securities, but the partnership did not work and the mill was sold in 1940. In 1941 Mead claimed to have one of the most diversified ranges of printing papers, and to be the largest leather tanning extract producer in the U.S. (Mead Annual Report, 1941).

In 1942 G.H.M. retired to the position of chairman, and Sydney Ferguson became the new president (1942-1947). The company headquarters were moved from Chillicothe to Dayton in 1943. During the war Mead built one corrugated paper machine, but mostly focused on growth in printing papers. The Escanaba Paper Company was bought in 1942 and the Manistique Pulp & Paper was acquired in 1943. They expanded Mead's production in groundwood pulp and paper, and expanded it geographically towards the north, to Michigan. In 1946 Mead bought

the Columbian Paper Company, which produced soda pulp and white papers in Virginia.

Interval of peaceful expansion (1946-1956)

Ferguson became chairman of the board in 1948. After him the presidency was given to Charles R. van de Carr (1948-1951) and Howard E. Whitaker (1952-1956). Mead developed an aggressive modernization program in two stages: the first stage increased production (1945-1950), and the second stage (1951-1954) reduced the overall manufacturing costs to the level of their strongest competitors (Mead Annual Report, 1952). Growth was somewhat limited by government price and supply controls, which were not lifted until after the Korean War in 1953 (Mead Annual Report, 1953).

The loss of coating patents in the early 1950s drove Mead to compete in printing papers with scale economies (Toivanen, 2004, p. 294). It reduced costs, closed the newly acquired Columbian Paper Company mills, and sold Manistique Pulp & Paper, as its specialty markets were discouraging. In the biggest mill, Chillicothe, Mead added a new paper machine. It also acquired the adjoining Chillicothe Paper Company, which produced high quality uncoated and specialty printing papers. Mead built two joint venture linerboard mills in Georgia in 1948 and 1954, thus tripling its paperboard capacity. They were organized under Georgia Kraft Company, 50% owned by Mead and 50% by Inland Container Corporation. Mead's research and development activities developed carbonless paper, used e.g. as duplicating paper in business forms, and a pulping process for oak to replace the scarce chestnut raw material. Oak was abundantly available near some of its paper and board mills. The tanning extract business withered. Mead's joint venture subsidiaries bought 700,000 acres (280,000 hectares) of forestland in Michigan and Georgia.

In the mid 1950's Mead's competitors were moving into paper box and container manufacture. The management pondered whether it would rather lose sales to competitors or lose old containerboard clients. To test the matter, in 1955 Mead acquired its first shipping container company, operating in Ohio and North Carolina (Whitaker, 1963, p. 22).

Seeking the growth markets (1957-1981)

In the late 1950's, Mead started acquiring container, carton and box producers and white paper merchants. One of the first acquired packaging producers manufactured multi-unit packaging, beverage packaging, display stands and packaging systems, all of which soon became one of Mead's core businesses. The packaging acquisitions stopped in 1965 when the Federal Trade Commission demanded Mead to divest 7 corrugated products plants and banned their further acquisitions until 1975. Then in 1970 the Justice Department demanded Mead to divest 23 merchant houses and banned their further merchant acquisitions until 1980. Organic growth continued, however.

In 1957 Howard E. Whitaker became the chairman. Donald F. Morris became the next president (1957-1963) and he was followed by George H. Pringle (1964-

1968) when D.F. Morris suddenly died. During these ten years, in the packaging sector Mead built its first bleached kraft paperboard machine with the Brunswick joint venture in 1962. With the Georgia Kraft joint venture it added a linerboard machine and a new kraft containerboard mill in 1966. Mead expanded to plastic packaging to offer a full line of service. In the commodity publication papers, Mead improved productivity, quality and cost control (Mead Annual Report, 1961), and built two white paper machines. The company moved into technical specialties, like filtration and decorative laminate papers, by acquiring the Hurlbut Paper Company and the Wrenn Paper Company in 1958, and to cotton fiber and watermarked papers by acquiring the Gilbert Paper Company in 1960. During the 1960s Mead acquired more decorative laminates and moved into photographic base material

Internationalization began in 1960 when Mead opened its first foreign subsidiary in Switzerland to engage in sales and technology licensing. Quickly Mead was a participant in a Netherlands multiple-packaging company, and had shares in container and box plants in France, Lebanon, West Germany and Spain. It also was involved with an Italian paper-converting operation, in a Belgian offset and business paper mill, and in a Belgian tissue company, which was sold in 1968. Mead additionally expanded to Canada in 1961 when it gained a 29% interest in the Canadian company British Columbia Forest Products (BCFP), which produced lumber, plywood and newsprint through Brunswick Pulp and Paper's ownership arrangements. Soon Mead formed another Canadian joint venture, the 50%-owned Northwood Pulp and Paper, to operate a sulphate pulp mill in British Columbia, with the Canadian mining company Noranda. Additionally Mead licensed its packaging system patents around the world.

In the mid-1960s the company started showing interest towards more unrelated diversification. For some years Mead had used electronic data processing to gain efficiencies in company management. In 1964 Mead made its data processing and systems abilities available to outside clients. In 1966 the Mead Educational Products group was created to distribute and produce school supplies and stationery. It was created through acquisitions like Westab, maker of notebooks and stationary, and Sargent Art, producing crayons, water paints and modeling clay. Mead also expanded through acquisitions to disposable tableware, and fabric design and distribution.

In 1968 J.W. McSwiney became Mead's new CEO and chairman. The traditional cellulose business was kept as Mead's basis, but the company intended to grow by moving into new markets (Mead Annual Report, 1968). The family-forming age group in need of housing, commodities, cars and education was seen as the source of growth. In the late 1960s Mead built a new lightweight coated paper machine and expanded its stationery business. Mead also took a great step to diversify into unrelated businesses. It acquired the Woodward Corporation, producer of pipes, iron castings, industrial rubber products, lime, cement and coal, with 12,000 employees. It also acquired a furnace company producing ferro-manganese and ferro-silicon for the steel and foundry industries and entered the furniture business. Additionally Mead acquired the Data Corporation, which specialized in computer systems, information storage and retrieval. For instance, Data Corporation assisted other companies in data-rich research, was developing a legal case search application in

Ohio, and cashed in on its knowledge in optics and aerial color photography e.g. by making moon charts for NASA.

Simultaneous growth in all these divisions was not easy in the inflation-prone 1970s. Mead focused on the ones which had the biggest growth potential and in which Mead had a strong position. It exited from large castings, lime and cement businesses, electric furnaces, furniture and fabrics, tableware, and the European white paper production. The school products distribution chain was divested and distribution was now handled through mass market retailers. Instead, the capacity was increased in rubber production, and small and medium-sized casting, mainly used in automotive parts. The Canadian joint ventures added some plywood, waferboard, sawmill and pulp capacity. The focus in printing papers was set on carbonless, coated offset and copy grades. The company started producing coated kraft paperboard and built a new totally owned corrugating medium mill, while it closed some small older paper and board machines. In 1977 Mead acquired Gulf Consolidated Services, a distributor of industrial construction and maintenance supplies, like pipes, fittings and electrical supplies. The LEXIS and NEXIS legal and news search services and a new color ink jet printer were developed.

In 1980 Mead decided to further focus on forest products, distribution and digital products (Mead Annual Report, 1980). Mead launched a major expansion program in forest products, and added a white paper machine and a joint venture linerboard machine. At the end of the period Mead had 1.7 million acres (700,000 hectares) of forestland in the U.S.

Return to forest products roots (1982-2001) and a merger

In 1982 Burnell R. Roberts became the CEO and chairman when McSwiney retired. Steven C. Mason became the president. The early 1980s were difficult times, as the industry was hit by a recession. Also, Mead was under a \$1.5 billion capacity expansion program, and it had to pay 45 million to settle a civil suit following the largest price-fixing suit in U.S. legal history, concerning price fixing in the box markets. Debts mounted and Roberts focused on costs and performance improvements. He followed McSwiney's strategy and sold the industrial products, industrial distribution and inkjet printer business, while building a new lightweight coated paper machine and adding coated kraft board and pulp capacity. In the late 1980s Mead further emphasized the value-added products. E.g. in 1986 Mead acquired the Zellerbach Distribution Group, which more than doubled its distribution business and made it the largest paper distributor in the U.S. at the time. After that Mead grew its LEXIS/NEXIS business with several small acquisitions, and spent about \$150 million to develop a new color printing technique involving paper sheets with photosensitive color coating. In the meantime, Mead reduced its exposure to commodity-oriented products and exited from most of its old forest products joint ventures, e.g. sold its share in the Canadian BCFP, sold its share in Brunswick Pulp & Paper, and dissolved the Georgia Kraft joint venture, receiving full ownership of a coated board mill in Alabama, but losing all its linerboard assets. Additionally half of Mead's corrugated box plants were divested due to the limited paperboard supply. In the early 1990's Mead added a 300,000 ton paper machine

producing coated board and linerboard in Alabama, and finally discontinued the photosensitive papers due to their disappointing demand.

In 1992 Steven C. Mason succeeded Roberts as the CEO and Chairman. Industry was again in a downturn and he launched a comprehensive performance improvement program. The LEXIS/NEXIS electronic publishing business was sold in 1994 for \$1.5 billion to Reed Elsevier plc. Packaging converting facilities were added in Spain, Australia, Britain, Poland, Mexico, Brazil, Argentina, and Chile. In Alabama, Mead built a new lightweight corrugating medium machine, adding about 400,000 tons of capacity. In 1996 Mead acquired an integrated coated paper mill in Maine for \$650 million. The deal included 490,000 tons of coated papers, some 110,000 tons of uncoated specialties and 667,000 acres (270,000 million hectares) of forest.

In 1997 Mason retired and Jerome F. Tatar became the CEO and chairman. Tatar continued the performance enhancement program, which had been continuous since 1992. White paper prices declined further as newly-established Asian producers started importing to North America, due to weakening Asian markets (Mead Annual Report, 1998). In 1998-1999 Mead sold to International Paper its Zellerbach paper merchant and distribution business, which did not meet Mead's earnings expectations (Mead 10-K, 1998), and divested its 50% share in Northwood, the pulp, lumber and plywood joint venture in Canada. The proceeds were used to acquire AT-A-GLANCE group, the leading manufacturer of time management products, for \$550 million. Mead also added decorative laminate papers in the U.S. and England, and established a school product subsidiary in Mexico. Mead wanted to position itself as a producer of high-quality low-cost coated papers, so it closed 6 uncoated fine paper machines and sold in 2001 the Gilbert Paper Company, producer of uncoated specialties e.g. currency, watermarked, and high quality communication papers. Some converting facilities were closed.

In 2002 Mead merged with the Westvaco Corporation, another American company. The merger was treated as an acquisition of Mead by Westvaco, and Westvaco's CEO, John A. Luke Jr., became the CEO and chairman of the new MeadWestvaco Corporation. The merger combined the companies' coated paper and office products businesses. It also created a value-added packaging giant by combining Mead's coated kraft board and multiple packaging systems for bottlers with Westvaco's bleached paperboard and high-end consumer packaging. Operations were streamlined by closing several small plants, and divesting Mead's containerboard business and unnecessary forest assets. By 2003, the company had acquired two calendar producers, the leading Irish pharmaceutical packaging company, and established a consumer packaging joint venture in Moscow. In January 2005 MeadWestvaco announced the sale of the company's paper business for \$2.3 billion to the investment firm Cerberus Capital Management. In a way, this divestment puts the endpoint to the story of Mead, which began with the birth of the printing paper company in 1846.

MeadWestvaco has several packaging converting plants around Europe, and also a couple in Brazil. The company serves the beverage, consumer products, healthcare, media and entertainment industries. All of the company's major paperboard capacity is in the U.S., apart from two small containerboard mills in

Brazil. The company has also inherited from Westvaco activated carbon and asphalt chemical businesses. The company has about 1.2 million acres (480,000 hectares) of forestland in the U.S., and 130,000 acres (53,000 hectares) in Brazil. MeadWestvaco says that in the future it intends to expand its higher margin packaging business by leveraging its strong positions in North America and Europe, and by penetrating the growth markets in Asia, Eastern Europe, and Latin America (MeadWestvaco press release, 2005).

2.3 Weyerhaeuser

2.3.1 Introduction

Weyerhaeuser has been known as one of largest American forest industry companies. It has also been known for its dedication to timberland ownership, and its focus in the upstream forest industry businesses of building products and market pulp. This is also visible in its paper sector, where most of its production capacity is in uncoated fine papers; and in the packaging business, where Weyerhaeuser concentrates on corrugated packaging. Neither of these is a very highly value-added business and could be seen as an extension of its raw material sources, designed to utilize them to the fullest. Weyerhaeuser's product portfolio has remained surprisingly stable over the years, especially from the 1960s onwards, as seen in Table 4.4. There has been some movement toward value-added business, like the "Other" section of Table 4.4, which in 2003 included engineered wood products and recycling business, while in the 1950s it included simpler things like bark products.

The company has not experienced any great strategic turnarounds or grand diversification experiments. Its headquarters is still located in the same neighbourhood as in 1900, and until 1998 the family was actively involved in the top management. The company started deploying huge acquisitions only after 1998. All of its big paper and pulp mills are located in North America (Weyerhaeuser 10-K, 2003). Due to its location in the West, its most important export partner outside North America has traditionally been Japan.

Table 4.4. *Development of Weyerhaeuser's product portfolio as percentage of net sales.*

	1940	1955	1965	1975	1985	1995	2003	Average
Lumber, chips, timber	67	57	25	38	25	25	24	37
Plywood, veneer, panels	1	6	14	13	14	11	12	10
Pulp, paper, packaging	16	31	51	42	36	45	39	37
WRECO	0	0	0	6	13	8	10	5
Other	16	7	10	2	11	11	15	10
Total	100	100	100	100	100	100	100	100

Source: Weyerhaeuser Annual Reports. WRECO = Weyerhaeuser Real Estate Company, residential and housing development, since 1970. In 1940 and 1955 pulp is included with paperboard.

This text discusses Weyerhaeuser's development in four parts. In (1900-1945) the company started as a timberland owner in the Pacific Northwest. Then it expanded

into sawmilling and retail and wholesale lumber yards, and finally, into pulp and plywood production. In the second period (1946-1956) its production grew. In the third period (1957-1980) Weyerhaeuser integrated forward into container, box and carton converting, moved to the South, and expanded to Canada and other countries. It also moved into fine paper and newsprint, and diversified into residential development, banking and some more exotic businesses, like salmon ranching. The fourth period (1981-2003-present) brought cost control and focusing. From 1998 onwards, the company started making big acquisitions and relied less on organic development.

2.3.2 The early years (1900-1945)

The Weyerhaeuser Timber Company was incorporated in January 18th 1900 in Tacoma, Washington. The company was a joint venture between 16 Midwestern investors, who joined to purchase 900,000 acres (360,000 hectares) of timberland in the State of Washington from the Northern Pacific Railway. Frederick Weyerhaeuser was the key organizer, although the associates were already familiar from other investments. Actually, The Weyerhaeuser Timber Company was only one of 48 forest industry companies that the Weyerhaeuser family owned an interest in between 1900-1914. These companies were located along the Mississippi River and its tributaries, in the South, Idaho and Pacific Northwest (Hidy, Hill, & Nevins, 1963, p. 588). Potlatch Forests and Boise Cascade Corporation were included in this portfolio. The investor group believed in partnerships and decentralization, so the companies were kept separate. Sometimes even the sawmills of a single company competed with one another (Sensel, 1999, p. 43).

At the time, the Weyerhaeuser land deal was the largest private land transaction in American history. Even though the Pacific Northwest held some of the largest remaining virgin forests in the U.S., the deal was considered exceedingly speculative because lumbering in that area was still in a primitive stage, fire hazard was great, coastal lumber mills seldom paid well and overproduction was a constant problem. Also, delivering the lumber to the big eastern markets was economically infeasible, some local timber like hemlock was considered commercially worthless, and “nobody even exactly knew what timber the tract held.” (Hidy, Hill, & Nevins, 1963, p. 213).

Fire hazards were emphasized by the massive Yacolt Burn of 1902. Weyerhaeuser started strongly lobbying for forest fire protection and against the high property taxes that penalized regrowing timber as a crop. Fire protection was improved by new state laws and the founding of the Washington Fire Association by the local timber owners, but it took until 1934 for Washington and Oregon to amend their land tax laws.

Initially the company focused on growing and consolidating its land holdings while the prices still were affordable. It expanded to Oregon and Northern California timberlands; by 1914 it owned about 2 million acres (800,000 hectares). For income, Weyerhaeuser sold small logging rights to local sawmills, partly to keep up positive relationships. In 1902 it acquired its first sawmill in Everett, Washington. The mill was very small, but included a good deepwater harbor. The mill’s purpose was to

gain experience in activities like the appraisal of Douglas fir, manufacturing and markets. The harbor was important, as the markets were mostly in California, and 10% of the lumber was exported (Hidy, Hill, & Nevins, 1963, p. 233). The mill bought its timber from the open markets before WWI, because it was cheaper than to do its own logging.

In 1915 Weyerhaeuser made its first real move into manufacturing by building its second sawmill, and soon in 1917 a third sawmill as a local joint venture. The added capacity needed outlets and the company bought a retail chain in the Dakotas, which was reachable within rail freight cost limitations. Additionally Weyerhaeuser and its associated companies in Idaho and the upper Midwest formed a joint marketing arm, Weyerhaeuser Sales Company, in 1916, which sold to independent retailers. A third outlet came when the opening of the Panama Canal to commercial traffic after WWI reduced transportation costs and enabled the company to open wholesale distribution yards in the East. As a byproduct Weyerhaeuser moved into merchant shipping. 5 more sawmills were built in the Northwest in 1928-1929. One of them expanded the production portfolio to Ponderosa pine.

As production grew, waste utilization gained importance. In the 1930s Weyerhaeuser started turning sawmill waste into Pres-to-Log fuel and log leftovers to wooden boxes. In 1931 the company built its first pulp mill in Longview, Washington to utilize its hemlock reserves. The pulp mill specialized in high quality bleached sulphite pulp, and proved a success even in the midst of the Great Depression. A second pulp mill was built in 1936. Another success in the depression was the 1928 introduction of 4-Square trademarked branded lumber. The next product expansion came in 1940 when Weyerhaeuser acquired 51% of Washington Veneer Company to learn the plywood business. In 1941 Weyerhaeuser established the Clemons Tree Farm, the nation's first certified tree farm, which served as a laboratory of forest renewal and work practices, and fulfilled the company's long-standing dream to grow timber as a crop. More tree farms were established in the following years. In WWII the company took the industry lead in supplying aircraft materials and nitrating pulp for munitions.

During the first period, the founder, Frederick Weyerhaeuser, was the president until his death in 1914. His son John Philip was the president from 1915-1927. After him came F.S. Bell, a member of another founding family. In 1934-1945, the president was Frederick E. Weyerhaeuser, another son of Frederick's.

2.3.3 The first steps of diversification (1946-1956)

After the war John Philip Weyerhaeuser Jr., J.P. Weyerhaeuser's son, became the president. The company set a new objective to gain greater operating efficiency through the integration of forest management, research, logging, sawmilling and pulp operations. Consequently, Weyerhaeuser Timber Company absorbed some joint venture sawmills and affiliate companies, e.g. the Sales Company, which already gained 70 percent of its income from selling Weyerhaeuser lumber (Hidy, Hill, & Nevins, 1963, p. 484, p. 559).

In 1947 the company built a new Douglas fir plywood mill and sold its interest in Washington Veneer to Georgia-Pacific Plywood & Lumber Company. Some

lumbermills were added, one of which was especially built to serve export markets. Post-war pulp markets were also promising. As plastics and rayon producers were interested in the company's existing sulphite pulp production, Weyerhaeuser built three new pulp mills, which produced bleached and unbleached kraft pulp. This was made possible by their innovation to turn Douglas fir into bleached pulp. Bleached board and containerboard machines were added to the pulp mills. The company expanded to paper production in 1956 through building a small joint venture mill which produced glassine and grease-proof papers. Other ways to utilize existing resources were also found, e.g. the company started making bark products, entered particleboard production, and started making hardboard from white fir, which had previously had little value. In 1954 the management decided to start producing chemicals like chlorine and caustic soda for its own use.

In 1956 Weyerhaeuser started its expansion outside the Northwest by acquiring 80,000 acres (32,000 hectares) of timberland in Mississippi and Alabama. Then it acquired the Kieckhefer Container Company and its affiliate, the Eddy Paper Corporation, its former clients. The deal included three paper mills located in North Carolina, Michigan and New Jersey, shipping container, milk carton and folding carton plants in 20 states and 400,000 acres (162,000 hectares) of forestland in North Carolina (Weyerhaeuser Annual Report, 1957). This action was Weyerhaeuser's first manufacturing expansion outside the Northwest, its first step into the conversion business, and the beginning of growth acquisitions. The deal was finished in 1957, after J.P.W. Jr.'s death (Weyerhaeuser, 1989, p. 33).

2.3.4 Growth and expansion (1957-1980)

Frederick K. Weyerhaeuser, J.P.W. Jr.'s older brother, became the president in 1957. In his era, Weyerhaeuser opened a sulphite pulp mill, increased plywood capacity, and added some converting plants. Many retail lumber yards were sold, and the company's first overseas marketing subsidiary, Weyerhaeuser International, was formed. In 1959 the company name was changed to the Weyerhaeuser Company, as the name no longer described the full scope of Weyerhaeuser's manufacturing activities. A new logo was created. In 1958 the company owned about 3.4 million acres (1.4 million hectares) in the U.S.

After F.K.W.'s retirement in 1960, Norton Clapp, a grandson of another of the founding investors, became the president. Clapp added paperboard production and built more converting facilities, the focus being on shipping containers. The packaging business turned international through shipping container plant acquisitions in Belgium, France, Germany, Venezuela, Guatemala, the Caribbean and South Africa. The European container investments were primarily done to learn the market and thus increase linerboard exports over time (Weyerhaeuser, 1989, p. 36). Log exports to Japan and the Far East increased in 1962 after the Columbus Day storm flooded the U.S. lumber markets. Weyerhaeuser's first overseas marketing office was opened in 1963 in Japan, and its second in 1964 in France. The company acquired an Australian building products distribution company in 1965. In Canada, it built a joint venture bleached kraft pulp mill in 1964 with local partners, and acquired timberland, panel and sawmill assets. In the U.S. Weyerhaeuser moved

to hardwood products, and added particleboard. It also acquired two fine paper producers and its major pulp clients, Hamilton Paper Company and Crocker, Burbank & Co, greatly expanding its position in that business. Weyerhaeuser was listed in 1963. Forest utilization was increased by e.g. examining for possible mineral values (Weyerhaeuser Annual Report, 1965).

Clapp retired in 1966 and George H. Weyerhaeuser, J.P.W. Jr.'s son, was elected as the President and the CEO. G.H.W. stepped up the company's acquisition growth pace, but also continued the traditions of organic growth. A High Yield Forest program was adopted, which doubled the company's wood growth rates. In the U.S. the company added container plants, particleboard, plywood and sawmills. The first Southern sawmill was acquired in 1966 and the first Southern pine plywood plant built in 1967. Over 2 million acres (800,000 hectares) were acquired in the South, primarily through the 325 million dollar Dierks Forests acquisition in 1969, which included a paper mill, gypsum mine and plant, wood products facilities and signified Weyerhaeuser's entry into multiwall sacks and grocery bags. In Canada the company gained the full ownership of its assets and increased market pulp capacity. International packaging expansion continued in France, Belgium and Greece. In Indonesia, the Philippines and Malaysia Weyerhaeuser acquired logging rights to 1.5 million acres (600,000 hectares) to supply local Asian markets.

In the 1960s and 1970s Weyerhaeuser additionally grew by diversification. In 1966 the company had already developed a piece of uneconomic forestland into a ski resort. In 1969 it moved further into mortgage banking and residential development, first in the West, then in North Carolina, New Jersey, Florida and Texas. In 1976 it moved into the garden supply and nursery business, supplying both indoor and outdoor ornamental plants in addition to its traditional nursery-grown trees. In the 1970s it entered the salmon ranching business to take advantage of warm mill effluents and its existing knowledge capital in water ecosystems. The company also started moving strongly into using and gathering recycled materials and began to export linerboard to China as the first western paper company. Weyerhaeuser entered the newsprint business by establishing a NORPAC (North Pacific Paper Corporation) joint venture in Washington State with the Japanese company Jujo Paper, later named Nippon Paper Industries. The newsprint mill started in 1979. Fluff pulp production was increased and Weyerhaeuser integrated forward to the production of private label disposable diapers, in which it soon became the nation's largest supplier.

In the late 1970s Weyerhaeuser decided to serve its international containerboard customers through U.S. exports and divested its foreign assets (Sensel, 1999, p. 99). The Southeast Asia harvesting operations were seen as environmentally and business-ethically risky (Sensel, 1999, p. 21) and also those assets were divested. Weyerhaeuser's mills in the Pacific Northwest again had to rely on Western markets and exports, because the intercoastal transportation costs by rail or ship had become unfeasibly high.

2.3.5 Increasing focus and cost control (1981-2003)

In the early 1980s mortgage rates increased and the construction industry slumped. Mount St. Helens erupted and salvation logging operation on 68,000 acres (28,000 hectares) was begun. At the same time the company was building its first oriented strand board mill, its first coated fine paper mill, its second newsprint machine and a big linerboard machine. Costs had to be cut. Additionally, the company said that the oversupplied environment of the 1980s made it emphasize Total Quality, reliability and customer service, instead of output like it did in the 1970s (Weyerhaeuser Annual Report, 1987). The company received consultation on its Total Quality effort from its Japanese partners. The consequence was an organization redesign, which identified overlaps and flattened the organization. Workforce and expenditures were reduced by 25 percent before 1983. Between 1980 and 1985 about 9000 people left Weyerhaeuser (Weyerhaeuser Annual Reports, employee data).

In the early 1980s real-estate, financial services and diversified businesses had provided about 30-50% of the company's earnings (Weyerhaeuser, 1989, p. 52). This made the company move through acquisitions further into the annuities and savings and loan business, turn itself into the nation's largest nursery stock supplier, and start producing hydroponically-grown lettuce. Kraft paper, multiwall bags and Douglas fir plywood were exited, while it added building products plants, corrugated box plants and a market pulp mill in the U.S., and pulp, paper and sawmilling capacity in Canada. Internationally, the company opened an office in Peking in 1984 and listed in the Tokyo Stock Exchange in 1986.

In 1988 G.H.W became the first Weyerhaeuser CEO to serve at the same time as the Chairman of the Board. In 1992 John W. Creighton followed him as the CEO, but G.H.W. continued as the chairman. Creighton was the first CEO not related to the original investors. In 1989 the senior management noticed the company's financial performance lagged behind its competitors, and decided to focus on the company's core businesses in which it could excel both in quality and cost. This lead Weyerhaeuser to divest its hydroponic food and salmon businesses, gypsum production, milk cartons, hardwood paneling, and garden supplies. It also sold its pine lands in the west and exited the insurance and banking businesses and home construction business, and scaled down its residential development business. At first Weyerhaeuser decided to move into the branded diaper markets, but process difficulties, inexperience in consumer marketing and the opinions of important fluff pulp customers made the company additionally divest its diaper business (Sensel, 1999, p. 104). More than 10,000 people left Weyerhaeuser's employ between 1988-1993 (Sensel, 1999, p. 37).

In the 1990s Weyerhaeuser's growth was relatively small scale. It grew in North America by adding two oriented strand board plants, a third newspaper machine, and some recycling facilities; and acquired some container plants, a couple of pulp mills, and Southern timberland. Internationally Weyerhaeuser expanded through joint ventures, e.g. it created a joint venture investment fund to buy timberlands in the Southern hemisphere, created a joint venture with SCA to build two packaging

plants in China to serve the international needs of existing customers and acquired half of a timberland joint venture in New Zealand.

In 1998, Steven Rogel became the CEO, and subsequently in 1999 also the chairman of the board. Before this he had been the president and CEO of Willamette Industries. Weyerhaeuser's new strategy was to grow by making big acquisitions, instead of building capacity (Weyerhaeuser Annual Report, 1999; Sensel, 1999, p. 177). Capital spending was kept low, and streamlining continued. Rogel started by acquiring a fine paper mill including related assets in Canada for \$543 million dollars. He also invested in Uruguay forest plantations. In 1999 Weyerhaeuser acquired MacMillan Bloedel, one of Canada's largest forest product companies, for 2.3 billion dollars. The deal included 19 corrugated packaging facilities, 3 containerboard mills, 11 sawmills, 6 oriented strand board, plywood and particleboard plants, 31 building material distribution centers and about 6 million acres (2.4 million hectares) of timberland in Canada and 428,000 acres (170,000 hectares) in the U.S. The acquisition contained approximately 795 million dollars worth of goodwill. The acquisition brought 49% of Trus Joist International, the rest of which was soon bought, making Weyerhaeuser the leader in engineered wood products. Next, the company closed many unnecessary facilities and bought some Australian sawmills and timberland. In 2002 Weyerhaeuser made its largest acquisition when it acquired Willamette Industries for 8.1 billion dollars, including 2 billion of goodwill costs. The deal included building materials, fine paper, corrugated packaging and grocery bag plants, mostly in the U.S., but also a few in Mexico and Europe. Afterwards several facilities were closed and some 0.5 million acres (200,000 hectares) of timberland in the U.S. was sold.

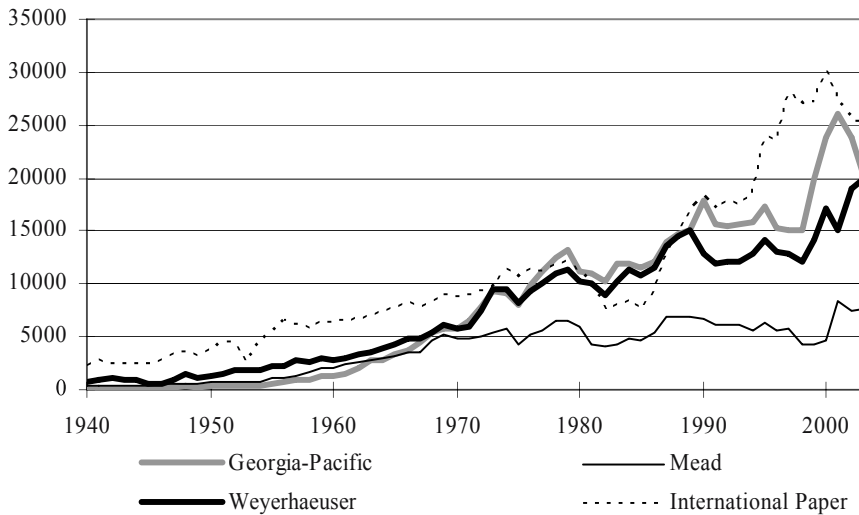
Weyerhaeuser produces lumber, plywood, engineered lumber, market pulp, uncoated fine paper, containerboard and packaging, some magazine paper and newsprint, and does residential development and paper recycling. In 2003 Weyerhaeuser had about 6.8 million acres (2.8 million hectares) in the U.S., 30 million acres (12 million hectares) in Canada, and interest in circa 580,000 acres (230,000 hectares) in joint ventures in New Zealand, Uruguay and Australia. In the future Weyerhaeuser says it aims for more synergy benefits and its international growth focus will be on the Southern Hemisphere (Weyerhaeuser Annual Report, 2003).

3 CASE COMPANY COMPARISONS

3.1 Financial comparisons

This section compares some of the companies' financial figures. All the numbers presented in this section are counted in 2003 dollars. In addition to Georgia-Pacific, Mead and Weyerhaeuser, also International Paper is included. International Paper has long been the most prominent paper company in the U.S. and in the world, and gives a good reference point to the financial data. Additionally the cyclical behavior is outlined better with more companies. All of these companies have been involved with forest ownership, building products, market pulp, paperboard and packaging production, and printing and writing papers and tissue, although their product mix

and strategic focus has varied. All of them have had unrelated business ventures, especially in the 1960s and 1970s. All have also been engaged with distribution of one sort or another, e.g. building products or paper. The surprising thing is that despite their differences, their financial developments have been relatively similar, which implies a strong environmental influence.



Source: Annual Reports of Georgia-Pacific, Mead and Weyerhaeuser. Lamberg, in this volume.

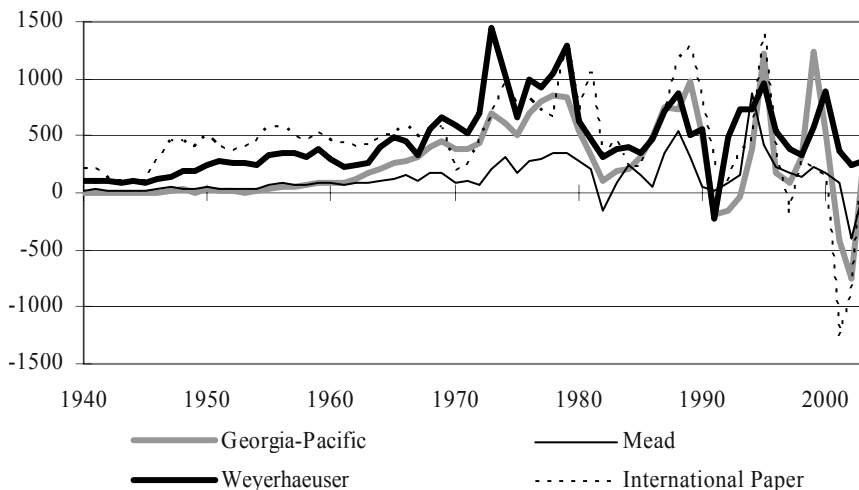
Figure 4.1. *Net sales. (Million dollars, in 2003 money). Georgia-Pacific, International Paper, Mead, and Weyerhaeuser. 1940-2003.*

Figure 4.1 shows that the companies' growth has been relatively smooth until the 1970s, but Weyerhaeuser and Georgia-Pacific have clearly grown faster than International Paper and Mead. Especially Georgia-Pacific has been a fast grower, since in the early 1940s its sales were 31 million dollars compared to Weyerhaeuser's 736 million dollars. Yet by the early 1970s the companies were the same size, showing why Georgia-Pacific's acquisition growth strategy has been called aggressive. Mead grew with the others, but dropped from the growth pace in the 1970s. This may have had something to do with its focus shifting in the 1970s from the forest products business to other areas, like metal castings. Considering Mead's slow growth pace after the 1970s, it is not so surprising that it ended up in a merger, while the others kept independent.

In Figure 4.1, between the 1960s and the late 1980s also International Paper's growth has lagged from its peers. It has regained its leading position lately by making some very big acquisitions, like Federal Paper Board in 1996, Union Camp in 1999, and Champion in 2000. The biggest acquisitions of Georgia-Pacific were Great Northern Nekoosa in 1990, Chesapeake Corp.'s away-from-home business in 1999, and Fort James in 2000. Weyerhaeuser's greatest acquisitions were

MacMillan Bloedel in 1999 and Willamette in 2002. All of these can be seen as abnormal peaks in the picture. Mead made no huge acquisitions, but in 2002 Mead merged with Westvaco. It would be tempting to conclude that the big companies have an incentive to grow at the speed of their peers, or risk being taken over by them. International Paper has a special incentive to stay at the top as its position has granted it a place in stock indexes like Standard & Poor's, and thus in big investor's stock portfolios. Falling from the index would make the investors sell.

In Mead's line the bulge between 1986 and 1998 is mostly due to its Zellerbach paper distribution business, which was sold as unprofitable. This displays one dilemma often connected with paper distribution businesses – they generate sales, but are sometimes difficult to run profitably.



Source: Annual Reports of Georgia-Pacific, Mead and Weyerhaeuser. Lamberg, in this volume.

Figure 4.2. *Net Income. (Million dollars, in 2003 money). Georgia-Pacific, Mead, Weyerhaeuser and International Paper. 1940-2003.*

Before the 1940's the companies' incomes were mostly small and fluctuated due to depression and war. Figure 4.2 shows how the companies faced their first growth spurt from the mid-1940s to the 1960s. During the first period the companies' size differences were clear. The next period, from the early 1960s to 1979, increased the growth pace. The difference was mostly due to the growing economy, and larger a number of acquisitions in the latter period. Especially the building products businesses flourished as the baby boomers needed houses and offices. In 1980 the seemingly eternal growth abruptly ended and the companies entered into a cyclical period which still continues today. In the last period the companies' income is no longer directly related to its amount of sales. In fact it seems that the big companies have not benefited much from their recent huge sales growth. These four periods are

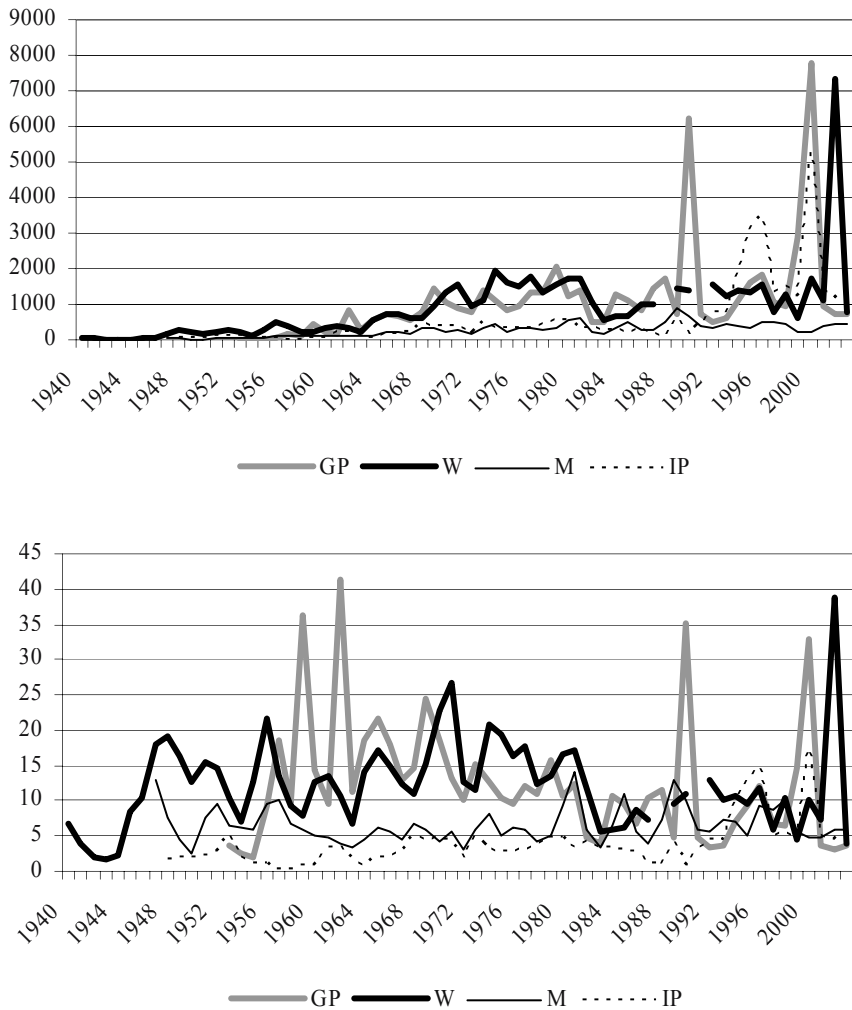
so sharply different that it is the main reason why the company histories are divided into four periods throughout this article.

Figure 4.2 indicates that in the current cyclical business, the benefit of big sales is mostly the better income growth leverage they provide at the peak years. In this kind of environment, cost competitiveness is most essential. The companies can no longer count on “business as usual,” and must be able to weather a few bad years in order to survive. Small companies may find it more difficult, as they have fewer reserves and cannot as readily take downtime at their mills. Diesen says (1998, p. 14) that the main reasons behind the cycles are the volatility of supply and demand and inventory speculation of customers. He also says economic fluctuations are a lesser factor. Nevertheless, in Figure 4.2 at least the timing of the peaks and valleys does match with the development of the U.S. GDP.

Figure 4.2 also shows that the downcycle of the early 2000s was the worst the companies have experienced since the 1940s. Now many forest products companies say they want to exit the cyclical commodity business toward more value-added products. This is a very old phenomenon. The problem is that the value-added products of today keep turning into the mature commodity products of tomorrow. For example, plywood was called value-added in the 1940s, but today it is a basic commodity product.

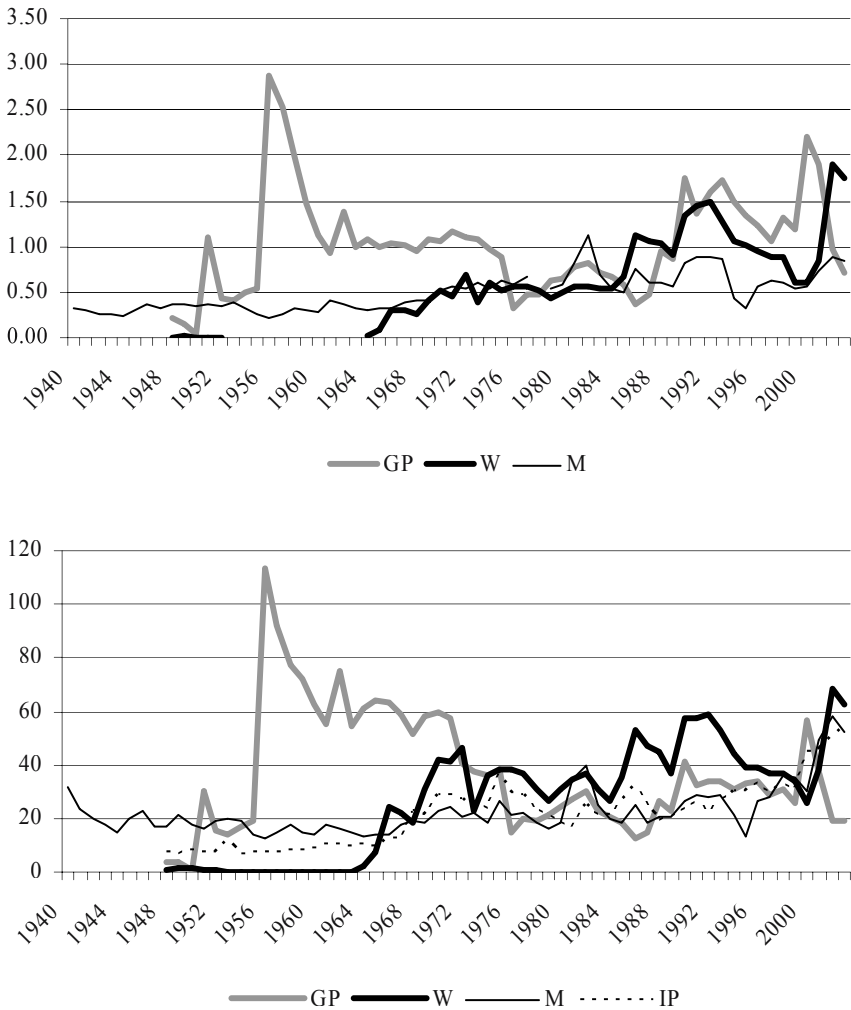
The investments in Figure 4.3 include the companies’ capital expenditure and acquisitions. The main period of investment growth seems to have ended with the depression of the early 1980s, as soon as the ongoing projects were finished. However, this is partly an illusion, because the change in income growth seen in Figure 4.2 also affected the investments. In 1965–2003 the companies’ investment rates have varied around 200% of their income. The high peaks in Figure 4.3 signify big acquisitions. The companies started acquiring their peers only in the 1990s. One reason for the recent huge acquisitions is that product demand in the U.S. no longer grows as fast as it did in the 1960s and 1970s. Acquiring capacity increases companies’ market shares but does not add industry capacity, which is a good move in an overcapacity-ridden industry.

The investment data in Figure 4.3 enforces the idea that Mead and International Paper have lagged behind the others. Mead’s investment levels rose to match the others in the 1980s, but International Paper did not reach them until the 1990s. Despite its immobility, International Paper has long been in a better position than the others to make big acquisitions, as they represent a smaller share of its huge sales and are thus less risky. In general, the big acquisitions lower the companies’ investment and cyclical risks by creating stronger balance sheets (Diesen, 1998, p. 95).



Source: Annual Reports of Georgia-Pacific, Mead and Weyerhaeuser. Lamberg, in this volume.

Figure 4.3. Investments. (Million dollars, in 2003 money) and Investments/Sales (%). Georgia-Pacific, Mead, Weyerhaeuser and International Paper. 1940-2003.



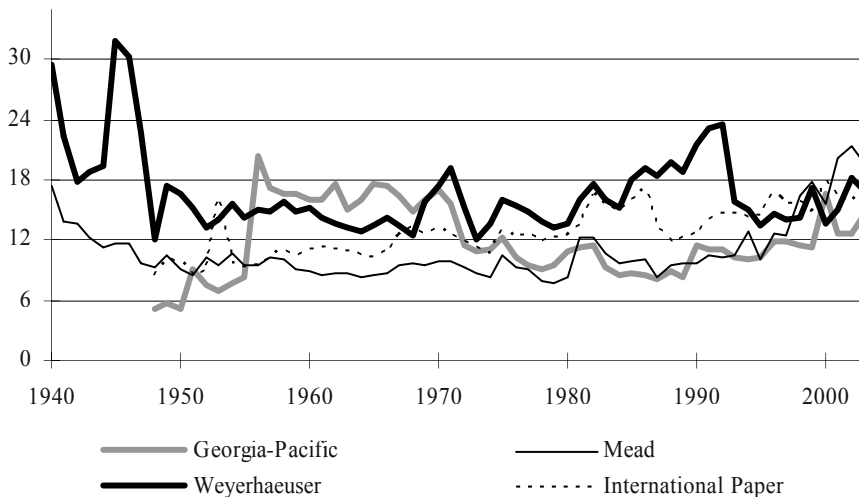
Source: Annual Reports of Georgia-Pacific, International Paper, Mead and Weyerhaeuser. International Paper's equity data was unavailable.

Figure 4.4. Debt ratios. (Long term debt/equity, and below, Long term debt/Sales). Georgia-Pacific, Mead, Weyerhaeuser and International Paper. 1940-2003.

Figure 4.4 shows that the case companies have had different ways to use debt financing. Mead has been very careful not to take too much debt, and has only temporarily resorted to it during the worst downturns. Weyerhaeuser did not take any debt until George H. Weyerhaeuser became the president in 1966 and started intensively growing the company through acquisitions. And even then

Weyerhaeuser kept its debt burden relatively low until the mid-1980s. Georgia-Pacific, on the other hand, has taken plenty of debt financing. Debt was important especially in Georgia-Pacific's early years, as the small company could not finance its fast growth alone. However, still in the 1990s the company's debt to equity ratio has been quite high. International Paper's debt financing has followed the general trends.

In 2003 dollar terms, the debt burdens of Georgia-Pacific, International Paper and Weyerhaeuser have naturally increased. In the mid 1970s each of them had around 3 billion dollars of debt; in the mid-1990s each had around 5 billion dollars of debt; and in the early 2000s their debts peaked at around 13 billion dollars. While this rise is not reflected in Figure 4.4, it is still significant, as the incomes have not been growing at the same pace.



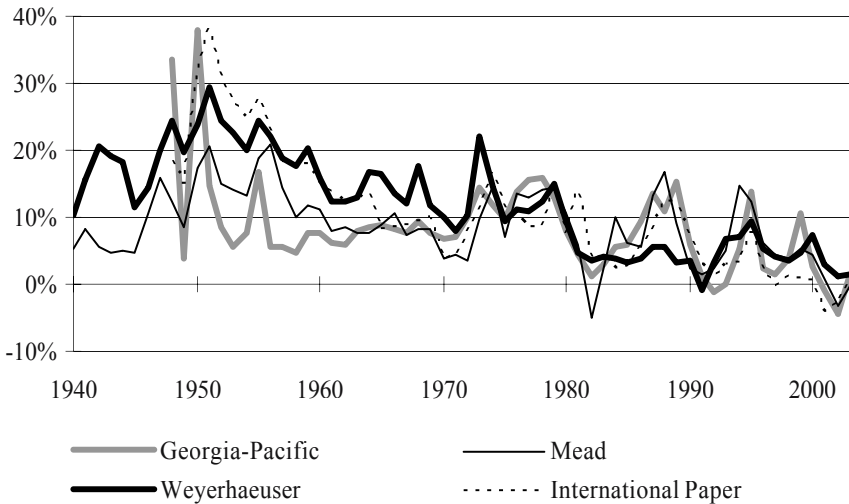
Source: Annual Reports of Georgia-Pacific, Mead and Weyerhaeuser. Lamberg, in this volume.

Figure 4.5. Capital turnover in months. ($12 \times \text{Total assets/sales}$). Georgia-Pacific, Mead, Weyerhaeuser and International Paper. 1940-2003.

Figure 4.5 shows that the capital turnovers initially improved, and then were relatively stable through 1960-1980, but seem to have been worsening since. Currently the cycle takes over a year to complete. Partly the recent worsening is due to bad years that temporarily affect the companies' sales, e.g. through lower demand and production curtailments. Also, the huge acquisitions after 1990 seem to have created peaks in Figure 4.5. It is likely to take time until such merged companies run smoothly. Also the big acquisitions inevitably bring some less efficient assets, especially since often companies are sold to others precisely because they have been perceived as less successful and unproductive.

Figure 4.5 tells us that Mead and International Paper, the most mature and paper oriented companies, were originally the most capital efficient companies. International Paper's line displays nicely how its capital efficiency constantly worsened between 1950-1985 when it made only a few investments. Mead was run efficiently until the early 1990s, after which capital turnover seems to have lost its importance. Weyerhaeuser's capital turnover worsened in the late 1980s, partly due to moves outside manufacturing into nurseries, banking and construction. Weyerhaeuser's streamlining effort in the early 1990s was highly successful, and its necessity was undeniable. Georgia-Pacific has been an efficient capital user since the 1970s compared to the others, especially considering its continuous growth. In the 1950s and 1960s Georgia-Pacific made relatively many capital intensive investments, which seem to have taken time to generate sales. Such investments are common in the forest industry, as it takes time to build the plants until they start generating cash.

Figure 4.5 shows the case companies have been relatively efficient capital users, considering the fact that they have had significant amounts of timberland bound to their assets. Still, the companies' timberland exposure is not similar, and e.g. Mead has had only about 1/4 of the others' timberland assets. In the new millennium the situation has become more uneven, as Weyerhaeuser and International Paper still own plenty of timberland, Mead has reduced its ownership, and Georgia-Pacific has divested all its timberland.



Source: Annual Reports of Georgia-Pacific, Mead and Weyerhaeuser. Lamberg, in this volume.

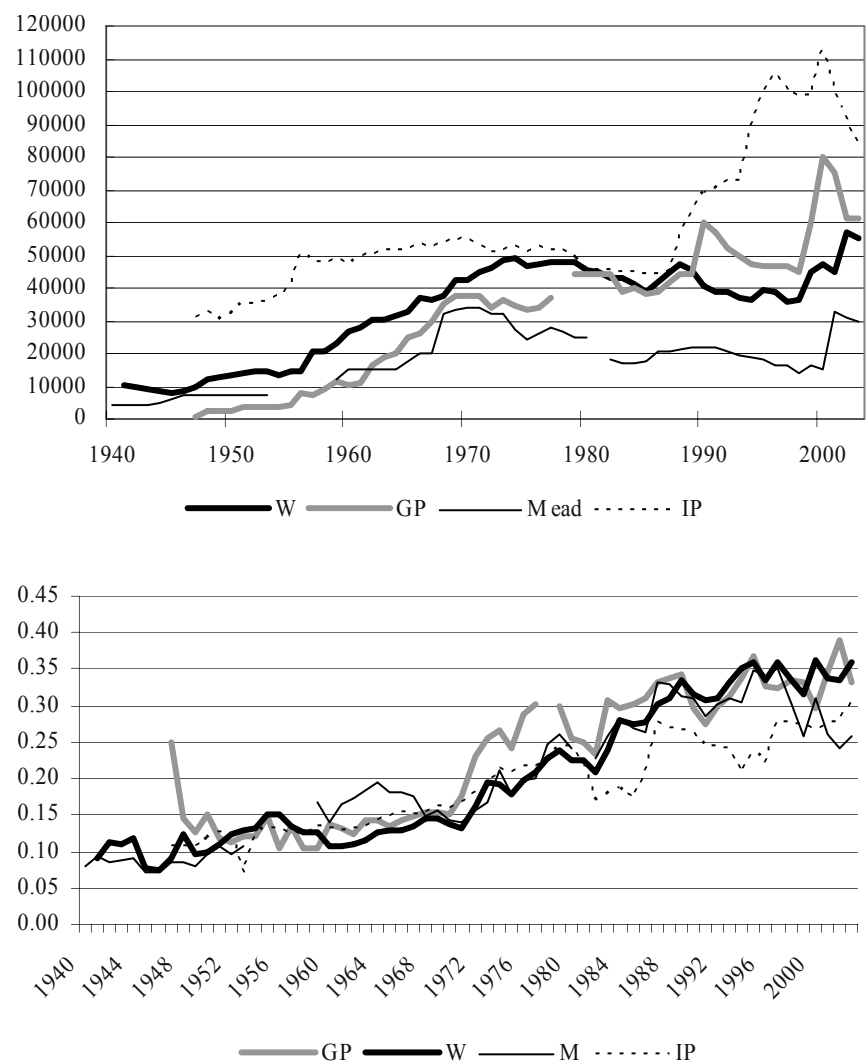
Figure 4.6. *Return on Invested Capital. (income+taxes/total assets). Georgia-Pacific, Mead, Weyerhaeuser and International Paper. 1940-2003.*

Figure 4.6 shows how similar the companies' development has been from an investor's point of view. Like in the incomes in Figure 4.2 between 1940-1960, the companies generated ROI according to their size. Then, from 1960-1980, ROI development was more stable. After 1980 ROI turned more cyclical, and the companies had some very bad years. Compared to its bigger peers, Mead fared surprisingly well during this period, especially in the good years. Obviously, size does not guarantee better investment returns.

The most striking thing is the constant decrease in ROI since the early 1950s, despite the companies' strategic differences. The downward trend has been most obvious since 1980. If this trend continues, within ten years the companies might be producing constant losses. It is interesting to compare the case companies' development since the 1980s with some of their large European peers (Näsi, Lamberg, Ojala, & Sajasalo, 2001, p. 141, p. 138). The ROIs of Enso, UPM and Metsäliitto have been fluctuating around 10%, and have peaked at 15-20%, which is about 5% better than their American counterparts, and with no clear diminishing trend. At the same time, investment/sales % of the Finnish companies' has varied between 10-20%, while the American companies' investments have usually been below 10% of sales. Investments in new machines have been found to contribute to higher ROIs in the paper industry (Artto, 2001, p. 53). The Finnish companies have heavily invested in big new paper machines, while the American companies generally have older and smaller machines. It is true that in the recession years big machines are at a disadvantage due to their high fixed costs, if they run underutilized. However, big machines with better scale economies improve the companies' competitiveness especially in the boom years, when most of the money in a cyclical business is made. Acquisitions do not help with asset quality or scale economies. Lack of investments (see Figure 4.3) might also explain why International Paper's ROI dropped the most during 1950-1970.

Figure 4.7 indicates that in the 1950s and 1960s the business focus was more in growing the business than in productivity improvements. This changed in the 1970s and 1980s as inflation and the first waves of cyclicity were damaging the business. In the 1990s, the companies have grown through huge acquisitions, while productivity improvements have been somewhat reduced. However, also the three severe downcycles of 1991, 1997 and 2003 make productivity improvements seem smaller than before the 1990s. The sharp peaks in the picture tell that often after big acquisitions, the companies have laid off many employees. Also the divestments of non-core businesses in the early 1980s are visible. In 2003 one employee brought about 350,000 dollars worth of sales to these companies.

Generally, the companies' productivity numbers in Figure 4.7 have improved in lockstep. Surprisingly, also Mead's productivity has improved at the general pace, even if its sales and employment figures have been very stable from 1980 to 2000. An exception to the rule is International Paper. Its employment figures grew far slower than the others' before 1970, which indicates that it was a larger company to begin with, but was also less growth-oriented than the others. Then, from the mid-1980s since it started growing through big acquisitions, International Paper's productivity improvements have lagged behind the others, which indicates IP has been slow to seek acquisition synergies through layoffs.



Source: Annual Reports of Georgia-Pacific, Mead and Weyerhaeuser. Lamberg, in this volume.

Figure 4.7. Employees and employee productivity (Sales in million dollars in 2003 money/employee). Georgia-Pacific, Mead, Weyerhaeuser and International Paper. 1940-2003.

3.2 Strategic comparisons

Table 4.5 concludes the four evolution periods found in the case companies' strategic behavior. The periods coincide strongly; thus we can conclude that the external environment has driven the companies' strategic choices. Still there are

interesting differences, like the fact that it took varying amounts of time for the downcycle of 1980-1982 to trigger changes in the case companies' strategic behavior.

Table 4.5. *The companies' evolutionary periods. Georgia-Pacific, Mead and Weyerhaeuser.*

	<i>Georgia-Pacific</i>	<i>Mead</i>	<i>Weyerhaeuser</i>	
Period 1	1927-1946	1846-1945	1900-1945	Initial growth
Period 2	1947-1959	1946-1956	1946-1956	Production-oriented, faster growth
Period 3	1960-1982	1957-1981	1957-1980	Expanding downstream in the value chain, unrelated growth
Period 4	1983-2003	1982-2003	1981-2003	Focus and streamlining

Table 4.6. *Number of actions per period, average annual number of actions (actions/years in a period), and the share of joint ventures per period. Georgia-Pacific, Mead and Weyerhaeuser.*

	<i>Georgia-Pacific</i>			<i>Mead</i>			<i>Weyerhaeuser</i>		
	No. of actions	Actions /a	Share of JV's (%)	No. of actions	Actions /a	Share of JV's (%)	No. of actions	Actions /a	Share of JV's (%)
P1	20	1	5	42	0.4	12	56	1.2	13
P2	49	3.8	2	24	2.2	46	36	3.3	3
P3	282	12.3	1	215	8.6	19	179	7.5	4
P4	140	6.7	2	110	5	6	155	6.7	13
Total	491	6.4		391	3.9		426	4.1	

Source: Action data collected from Annual Reports of Georgia-Pacific, Mead and Weyerhaeuser.

Table 4.6 shows differences in the companies' strategic activity per period. The fastest growing company, Georgia-Pacific, has clearly made the greatest number of actions, while the slowest growing company, Mead, has made the least. Mead was more active in the third period, but mostly due to unrelated diversification. In the fourth period it could not match the others' activity rate. Mead has traditionally made more joint ventures than the other two companies.

If the actions in Table 4.6 were divided into decades, we would see that initially the companies made few actions. The activity increased and reached its peak in the 1960s, after which it again has subsided. However, as growth per se has not subsided, this implies that the companies nowadays buy asset bundles, like large competitors, rather than small competitors or individual plants, as they often did in the 1960s.

Table 4.7. *Georgia-Pacific's strategic actions in the value chain. Percentage of strategic actions per period.*

	<i>Period 1</i>	<i>Period 2</i>	<i>Period 3</i>	<i>Period 4</i>	<i>Average</i>
1. Raw materials (timberland etc.)	0	16	7	6	7
2. Sawmills	60	10	22	14	27
3. Pulp (mechanical and chemical)	0	0	3	2	1
4. Paper	0	0	4	9	3
5. Paperboard	0	0	1	2	1
6. Panel, plywood, veneer	0	22	19	17	15
7. Paper and board converting	0	0	11	6	4
8. Marketing and distribution	40	24	7	6	19
9. Other related	0	6	1	1	2
10. Multiple categories	0	16	5	13	9
11. Unrelated business	0	4	21	25	13
Total	100	100	100	100	

Source: Annual Reports of Georgia-Pacific, Mead and Weyerhaeuser.

Table 4.8. *Mead's strategic actions in the value chain. Percentage of strategic actions per period.*

	<i>Period 1</i>	<i>Period 2</i>	<i>Period 3</i>	<i>Period 4</i>	<i>Average</i>
1. Raw materials (timberland etc.)	2	25	2	5	9
2. Sawmills	0	0	5	2	2
3. Pulp (mechanical and chemical)	12	4	2	4	6
4. Paper	5	13	10	12	10
5. Paperboard	40	21	5	5	18
6. Panel, plywood, veneer	0	0	2	1	1
7. Paper and board converting	0	8	32	37	19
8. Marketing and distribution	2	8	12	3	6
9. Other related	5	8	2	5	5
10. Multiple categories	26	8	8	7	12
11. Unrelated business	7	4	20	21	13
Total	100	100	100	100	

Source: Annual Reports of Mead.

Table 4.9. *Weyerhaeuser's strategic actions in the value chain. Percentage of strategic actions per period.*

	<i>Period 1</i>	<i>Period 2</i>	<i>Period 3</i>	<i>Period 4</i>	<i>Average</i>
1. Raw materials (timberland etc.)	34	11	5	12	16
2. Sawmills	18	19	9	17	16
3. Pulp (mechanical and chemical)	4	6	6	2	5
4. Paper	0	6	7	6	5
5. Paperboard	0	6	3	8	4
6. Panel, plywood, veneer	2	14	12	11	10
7. Paper and board converting	0	0	25	14	10
8. Marketing and distribution	18	14	11	4	12
9. Other related	18	17	7	1	11
10. Multiple categories	2	6	6	8	6
11. Unrelated business	5	3	9	18	9
Total	100	100	100	100	

Source: Annual Reports of Weyerhaeuser.

The main difference in the case companies' strategies is that Weyerhaeuser and Georgia-Pacific were originally building products-oriented, whereas Mead was a paper producer. This is visible in Tables 4.7, 4.8 and 4.9, as Weyerhaeuser and Georgia-Pacific have made more moves in sawmills (2) and panels (6). They have also owned more land (1) and had more pulp assets (3) than Mead, even though in the Tables Mead seems to have made almost as many pulp and timberland actions. In fact, the companies have developed pulp production for opposite reasons – Mead in order to be more self-sufficient, and the other two to utilize sawmill leftovers and low value timberland assets. Mead also made many joint ventures in pulp, while the others more often kept full ownership, especially in their American pulp mills. Compared to Weyerhaeuser, Georgia-Pacific entered pulp production fairly late, in 1958, and announced less pure pulp actions, which explains its low (3) number.

Tables 4.7, 4.8 and 4.9 show that the paper (4) and paperboard (5) sector was Mead's area of focus. The others moved there later, mainly to gain more value from their pulp production. This is also reflected in paper and paperboard converting (7), which has been relatively more important to Mead than to the others. Most converting actions concern packaging activities, but Mead's numbers also include many actions in stationery, school products and diaries.

Tables 4.7, 4.8 and 4.9 show that all of the companies have been involved in marketing and distribution (8), but in varying degrees. Georgia-Pacific and Weyerhaeuser were mostly involved in building products distribution, while Mead has mostly been acquiring paper merchants. The decrease in Georgia-Pacific's and Weyerhaeuser's marketing activity is much due to an increase in activity in its other sectors. In the fourth period, Georgia-Pacific additionally restructured its existing building products distribution centers and expanded to paper distribution. Moves in other related businesses (9) have been less important, except for Weyerhaeuser in the early years as it tried to innovate new ways to use sawmill leftovers. Multiple actions (10) include actions that have contained assets from multiple categories, like timberland and sawmills, or pulp and paper. Activity in category (10) indicates the

timing of the relatively big actions, although it does not tell their size. Weyerhaeuser has had fewer big actions than the others.

Tables 4.7, 4.8 and 4.9 also indicate that Weyerhaeuser has had less unrelated diversifications (11) than the other two. But the numbers are not the entire story. Georgia-Pacific expanded to the production of various chemicals, gypsum, and furniture. Some of its chemicals were used in its plywood, panel, pulp, and paper businesses, and the gypsum production expanded Georgia-Pacific's building products assortment. Weyerhaeuser expanded to land development and residential building, banking and mortgage operations, ornamental plant nurseries and salmon and hydroponic foods. Construction uses land and building products, and Weyerhaeuser possessed plenty of knowledge in seed orchards and water ecosystems. Mead expanded to furniture, metal castings, rubber, data services and color printers. All of these moves were completely unrelated to its paper business. Many of the case companies' expansions were later divested, but Georgia-Pacific still is big in forest industry chemicals and Weyerhaeuser still has its land development business. Mead gained little from its unrelated diversifications. Completely unrelated diversification does not seem to pay in the forest industry. Additionally, the furniture business seems to be too far removed from the big companies' resource base to be interesting.

Table 4.10. *Acquire, build, sell and closure actions of Georgia-Pacific, percentage.*

	<i>Acquire</i>	<i>Build</i>	<i>Together</i>	<i>Sell</i>	<i>Close</i>	<i>Together</i>	<i>Total</i>
Period 1	60	40	100	0	0	0	100
Period 2	53	43	96	4	0	4	100
Period 3	42	57	99	0	0	1	100
Period 4	28	24	52	29	19	49	100
Average	46	41	87	8	5	13	100

Source: Action data collected from Annual Reports of Georgia-Pacific. Numbers truncated

Table 4.11. *Acquire, build, sell and closure actions of Mead, percentage.*

	<i>Acquire</i>	<i>Build</i>	<i>Together</i>	<i>Sell</i>	<i>Close</i>	<i>Together</i>	<i>Sum</i>
Period 1	45	36	81	10	10	19	100
Period 2	46	42	88	8	4	13	100
Period 3	42	35	78	15	7	22	100
Period 4	21	28	49	29	22	51	100
Average	39	35	74	15	11	26	100

Source: Action data collected from Annual Reports of Mead.

Table 4.12. *Acquire, build, sell and closure actions of Weyerhaeuser, percentage.*

	<i>Acquire</i>	<i>Build</i>	<i>Together</i>	<i>Sell</i>	<i>Close</i>	<i>Together</i>	<i>Sum</i>
Period 1	34	63	96	0	4	4	100
Period 2	28	64	92	8	0	8	100
Period 3	31	60	91	6	3	9	100
Period 4	24	29	53	19	28	47	100
Average	29	54	83	8	9	17	100

Source: Action data collected from Annual Reports of Weyerhaeuser.

Tables 4.10, 4.11 and 4.12 tell us what proportion of all strategic actions of the case companies have been acquisitions, organic development, divestments or closures. In short it shows how the case companies have managed their assets and how they have evolved. Georgia-Pacific and Mead have been keener in using acquisitions than Weyerhaeuser. Georgia-Pacific has made fewer decreasing moves than the others. Mead, on the other hand, has made more decreasing actions than the others, which indicates it has operated in a more mature business already at the beginning. Mead has also made some bad investment decisions, e.g. in the early years it acquired many small paper and board mills that soon were noticed to be unprofitable and were sold or closed. Mead has also tended to dispose of uninteresting assets one plant at a time, rather than by big divestments. Weyerhaeuser and Georgia-Pacific built many plants in the building products and plywood business during its growth spurt of the 1960s-1970s, which increased the proportion of their investments.

In Tables 4.10, 4.11 and 4.12, the companies' action profiles have become more similar on the fourth period. The cyclical business and the more demanding business environment also increased the proportion of decreasing actions to around 50% of activity. The decreasing actions were not focused on single action types of Tables 4.7-4.9 in each company, but affected all of them rather uniformly. Above 50% decreases were witnessed in Georgia-Pacific's timberland assets, in Mead's paper production, and in Weyerhaeuser's sawmill business. In the fourth period the companies preferred to close their old unprofitable mills, firstly because they were difficult to sell and secondly because this decreased the industry overcapacity, thus increasing the profit potential of their other mills.

It must be noted that Tables 4.10-4.12 only tell about action activity. The number of actions does not correlate with the capacity of actions. E.g. while Georgia-Pacific and Weyerhaeuser seem to have made as many acquisitions as Mead in the fourth period, their acquisitions were huge, unlike Mead's, as the historical narratives revealed.

4 REFLECTIONS ON THE CASES

Unlike in the airline industry, the forest industry companies were found to rarely make public announcements "responding to" a competitor action. One reason for this could be that action irreversibility decreases response likelihood (Chen & MacMillan, 1992). Since the observed actions in the forest industry are irreversible big investments, the companies' ability to match the action may be limited due to the lack of construction sites or acquisition candidates. Nevertheless, since action-response pairs were not recognized, this research could not analyze the action-and-reaction characteristics found in previous studies (see Table 4.1). Additionally, since all the case companies in this research are big, old and in the same mature industry, there are only a few general demographic comparison points between them.

Many antecedents were recognized that guide and limit the competitive action within the forest industry. Like the action predictors of Table 4.1, they help to predict the likelihood of a certain kind of action. However, unlike the action predictors, the antecedents suggest that some actions are more likely than others due to subtle evolutionary background influences. The existence of these antecedents

additionally implies that a longitudinal competitive dynamics study should account for major changes in antecedents, because they make action likelihoods and patterns less comparable over long time periods.

4.1 The environment-related action antecedents.

There have been strong *strategy trends* in the industry when all companies have made similar actions, like moving to packaging around 1960, unrelated diversification in the 1970s, successive waves of core focusing in the 1980s and 1990s, starting new paper machines at the bottom of the 1981 and 1991 downcycles, and the huge acquisitions made around cyclical market peak times. Also the internationalization happened in groups. It started in the 1960s when the companies were all interested in Canadian pulp mills, then the building products producers Weyerhaeuser and Georgia-Pacific acquired tropical hardwood forests and Weyerhaeuser and Mead acquired interests in European packaging converters. In the 1970s and 1980s the companies were not interested in Europe, and withdrew from their tropical operations around 1980. The internationalization development of the 1990s has been more unpredictable as Weyerhaeuser invested in Chinese box plants and southern hemisphere timberland and Mead invested in European packaging plants, while Georgia-Pacific turned into a European tissue producer through the James River acquisition. The similarity of actions also shows up in the way the companies' four historical periods coincide.

The companies appear to have constantly increased integration and scale economies by adding pulp mills and growing the size of their operations. The histories show there has been movement from commodity products toward higher value-added products, like consumer packaging and tissue. However, all are still strongly involved with the production of semi-finished and unconverted products. This implies that the spread of their value-chain has changed rather than their position in it. In the 20th century the companies also avoided building big production facilities abroad. Unrelated moves seem to slow down company development. It could be that in a mature business it is important to move with the flow. The industry typically produces undifferentiated bulk products. All of these rules could be called as the *industry operation logic*.

Economic development, consumption patterns and demographics affect through product demand the companies' growth, move activity (Table 4.6), and financial development. To give precise examples, GDP started rising and business activity improving after WWII. This and the growth period of the 1960s and the cyclical bottoms in GDP 1980-2000 affected the case companies' activity and financial development directly. Then, as GDP rises, people have more money to spend and consumption patterns change. The Annual Reports showed how the demand for fast food, frozen food, and goods that needed single or multilayered packaging started rising in the 1950s. We also know that the amount of print advertising and office paper usage has vastly grown since WWII. Another example is the baby boom generation born after WWII, which needed houses in the 1960s and 1970s, thus increasing lumber demand. The forest industry companies have catered to the emerging demand. However, while important, economic development does not

overpower competitive strategy. Even in the midst of the Great Depression the case companies found business opportunities: Georgia-Pacific in lumber exports, Weyerhaeuser in value-added pulp and lumber, while Mead innovated in coated papers and moved to paperboard, the demand for which grew as converters developed new paperboard-based products for consumers (Heinrich, 2001). Innovation also helped other American forest industry companies through the Depression, like Kimberly-Clark, which survived the Depression mostly because of its newly-invented brand-named consumer products, Kleenex facial tissues and Kotex feminine hygiene products (Heinrich & Batchelor, 2004, p. 2).

Government restrictions limit the companies' growth opportunities directly. To give some examples of government restrictions that were mentioned in the case companies' Annual Reports: land taxation discouraged land ownership and the replanting of trees in the early 1900s, taxes and supply restrictions limited growth during WWII, overseas investments were restricted at the end of the 1960s due to currency strength problems, and tighter environment laws redirected company investment capital into environmental projects in the 1970s and again in the early 1990s. However, these situations also generated temporary business for the case companies, e.g. in supplying army needs and advising others in environmental projects.

4.2 *The company-related action antecedents.*

Companies' strategic actions are *path dependent* (see the Introduction chapter of this book) and dependent on their resource base. For example, Mead started as a paper and paperboard producer. It operated in papers over 100 years, and it still operates in value-added packaging, diaries and stationery. Weyerhaeuser initially focused on raw materials and sawmills. From there it expanded to land development and building products, to chemical pulp, and then further into containerboard, paper, containers, boxes and cartons to add value to existing raw materials. Georgia-Pacific started as a building products merchant, expanded to sawmills, timberland and panels, and then, like Weyerhaeuser, to pulp, containerboard, paper, and packaging.

On the other hand, path dependency also shows in the willingness to make certain actions. Weyerhaeuser seems to have strictly expanded within the limits of its existing raw materials and production, and has emphasized timber. Still in 1973-1979 Weyerhaeuser defined itself as "The tree growing company"; from 1998-2005 its slogan has been "The future is growing." Timber is an upstream product in the value-chain. On the other hand, Georgia-Pacific expanded to more various paper grades and to more or less-related businesses like chemicals. Recently it has moved downstream, as it has divested its timberland and building products distribution assets and strengthened its consumer products. The difference may lie in the fact that because of its merchant history Georgia-Pacific has defined its market opportunities more broadly. To conclude, there seems to be a pattern in which the companies are integrating down the value chain relating to their specific businesses, but also depending on their *self-image*.

CEO influence guides the companies' competitive actions. Georgia-Pacific, who had only 5 CEOs, grew the most, and was run by the old-guard managers until 1982.

Mead had 12 CEOs and grew the least. Weyerhaeuser was led by the family until the late 1990s. This would imply that strong CEOs can increase the company's competitive aggressiveness and thus growth. To give concrete examples, George H. Weyerhaeuser changed Weyerhaeuser's growth policy by deciding to use debt financing and increasing the number of acquisitions. He also changed the company strategy greatly, e.g. by diversifying into many new businesses, like residential development, and expanding the company into new geographic regions, like into sawmills in the Southern U.S. and tropical forests. His CEO period lasted for 26 years. After this he served an additional seven years as the chairman of the board. In Mead, J.W. McSwiney, who diversified the company into metal, rubber and data service industries, served 13 years as the CEO. In Georgia-Pacific, Robert B. Pamplin ran the company from 1960-1975, first as the president and later as the CEO. During these 16 years the company diversified greatly and grew through many acquisitions. On the other hand, the strategy influence of a CEO has been partly limited, as the companies often made similar moves within the industry. For example, all the companies chose to diversify into packaging conversion during the latter half of the 1950s.

5 CONCLUSIONS

This study observed competitive dynamics and strategic evolution in the American forest industry through three longitudinal case studies. It was recognized that the three case companies did not represent the entire industry, but they nevertheless provided insights into the industry dynamics. This study was new in several ways: the competitive dynamics of the forest industry have not been previously studied, and the longitudinal case study approach was a novelty. Because of the case study approach the intention was to look beyond the previously-studied interplay of competitive actions and reactions, and instead to explore the antecedents of competitive action. The study was explorative, as it was uncertain what we could see by using this new research approach.

The first conclusion of this explorative study is that the forest industry does provide interesting avenues for competitive dynamics research. The industry is very different from the previously-used samples, and while we seem not to be able to observe particular action-response dyads, the strong tendency towards similar actions implies an industry-wide competitive dynamic. A larger, possibly statistical sample might create interesting results.

The second conclusion of this study is that longitudinal research on companies' competitive actions reveals interesting insights into their evolution. However, as the case companies followed generally similar periodical development patterns, grew with same methods – although with a slightly different strategic focus – had similar financial development, and did not openly compete with one another, it is difficult to make nonstatistical cross comparisons of their competitive dynamics evolution. Following the development of clear leader-challenger pairs would allow for more specific analysis.

The third conclusion is that several kinds of economy and company antecedents were found to guide the competitive actions. At the economy level the companies'

competitive choice was found to be limited by similar strategy trends, industry operation logic, economic development, consumption patterns, demographics, and government restrictions. On the company level, at least path dependency, self-image and CEO influence had an effect. Major changes in such antecedents should be accounted for in a longitudinal statistical study, e.g. by dividing the data into smaller independent periods.

In the future, it would be useful to make a statistical longitudinal competitive dynamics case study in the forest industry by using a larger sample. Combining the case study and statistical research approaches would additionally create a more complete picture of the competitive dynamics within the industry. Alternatively, it might be useful to observe the longitudinal development of leader-challenger pairs generally, or in specific product grades.